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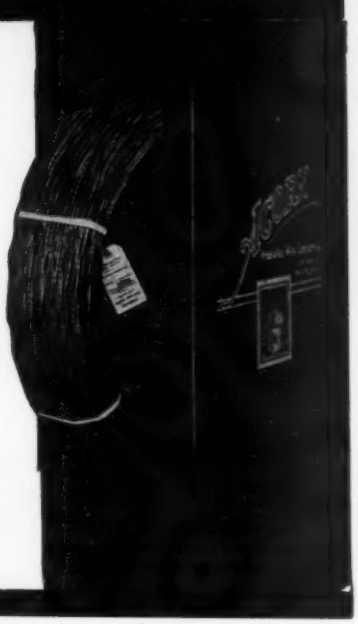

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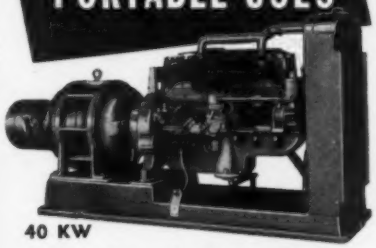

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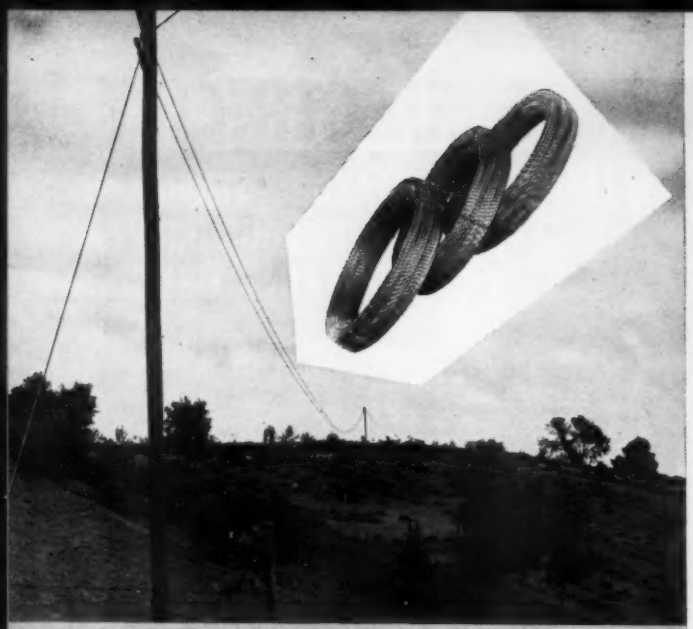

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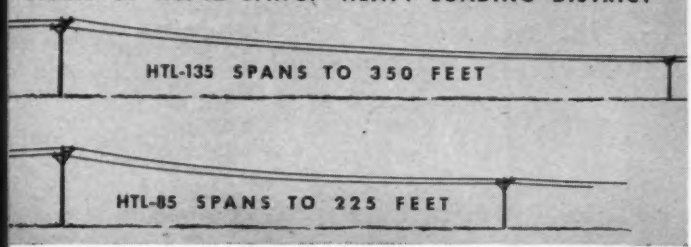

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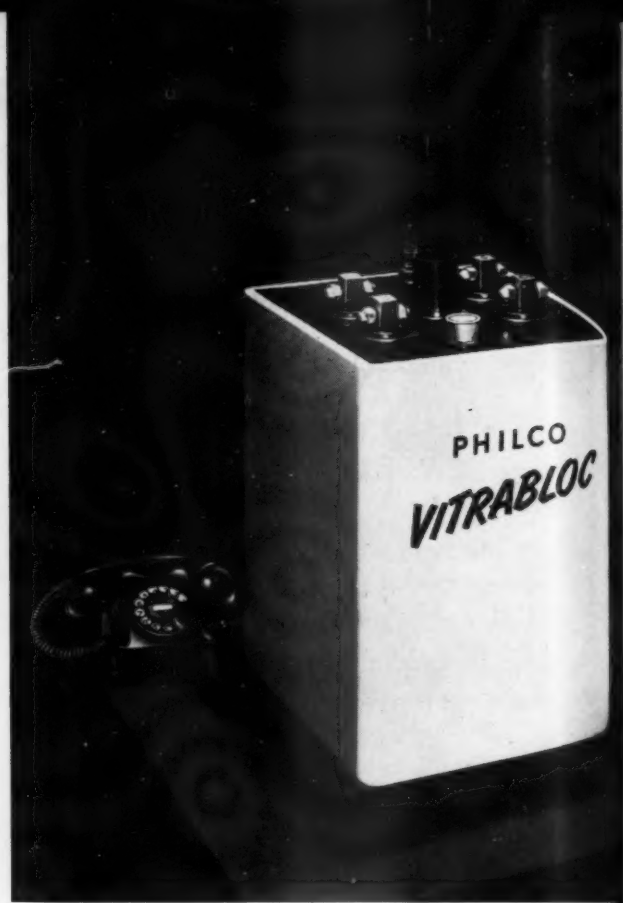

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AMERICA'S FARM TELEPHONE

Program Well On Its Way

By CHARLES F. MASON
President
Associated Telephone Co., Ltd.
Santa Monica, Calif.

The telephone industry can and will successfully meet the challenge of bringing more and better telephone service to the farmer, Mr. Mason says. Intrusion of government only can complicate the program, if not delay its accomplishment. Reprinted from "Public Utilities Fortnightly."

A FEW days after victory in Europe was proclaimed, the War Production Board announced the results of a survey it had been making concerning how many and how badly the American home front wants to buy certain appliances. It showed that millions of American householders are just waiting for an opportunity to buy new refrigerators, washing machines, radios, hot water heaters, and so forth. Naturally enough, this survey *did not* include some two million American homes reported to be waiting for the removal of war restrictions to put in new telephone service.

I say "naturally enough," because we have become accustomed to making a clear distinction between utility appliances which are bought, maintained, and occasionally replaced by the customers themselves and only incidentally serviced by the gas or electric utility for purposes of mere operation. These are distinguished from the telephone, where the service and the "appliance" are indivisible—where the instrument is merely the terminal device by which service is rendered.

Such a distinction is not only natural but entirely correct. Yet I sometimes wonder if the public would not get a little clearer picture of the social utility of the telephone if we were to compare its function with ordinary appliances bought by the consumers themselves. In plainer words, let us consider what happens in the typical generation cycle of the average modern American family, urban or rural. When the parents are young and babies come along, the washing machine becomes an important home appliance for obvious reasons. When the children are a little larger and bring the normal amount of kid dirt into the house, the vacuum cleaner and hot water heater assume more importance. Still older, they want individual radios in their rooms. Finally, they marry and depart to make homes of their own. The older folks are likely to retire the washing machine and patronize the more convenient laundry service. The married children have probably taken their radios with them. The hot water heater stays on, but with less strenuous use. So does the vacuum and even it may not be replaced.

Now, during the diminuendo phase, nobody thinks of blaming the gas or electric companies because of the drop in number of monthly cubic feet or kilowatt hours consumed by this shrinking family unit. Nobody says these utility services, as such, are falling down on the job because a particular appliance may be retired. It generally is understood that the departing load from the older household is being renewed with interest in other younger households. Life goes on.

Now, in an oversimplified way perhaps, that is about what has happened in the case of our rural telephone service which goes far to explain the drop in the number of rural stations which began about 1920, reached a low-water mark about 1935, and has been recovering rapidly despite war restrictions since 1940. Chart I accompanying this article shows the "pitch" of the curve for this decline and recovery of rural telephones.

Continuing our analogy, in 1920 there were, roughly, two and three-quarter million rural telephones in the United States.[1] In 1920, the rural telephone performed a number of vital services for the farmer, some of which have since been taken over by other facilities. In 1920, there were few hard roads in the real farm country, few automobiles, and no radios. To the snow-bound or mud-bound farmer of 1920, the telephone was the only readily available link to the outside world. It brought him news, weather information, social contacts generally, and a control method whereby he could, with the cooperation of his neighbors, make the most efficient use of what limited horse-drawn or other physical transportation, including "shank's mare,"

[1] The distinction between a rural and farm telephone should be borne in mind. For instance, a paraphrase or interpretation of the United States Census Bureau's long definition of a farm is "A tract of land of three acres or more devoted to agricultural purposes—or less than three acres, provided that there is a gross income from agricultural products of at least $250 per annum and includes such units as nurseries, mushroom cellars, apiaries, etc., which, however, are not necessarily located in rural areas." A rural telephone, on the other hand, is in general outside of the base rate or urban territory served by the telephone company. It is estimated that at least 80 per cent of the rural telephones are on farms in rural areas, the others being in country stores, gas stations, etc.

were still open to him. It was, in short, a rather rough, early substitute for many conveniences the farmer has since come to enjoy.

We know, of course, what has happened since then, with our great highway system and distribution of automobiles, and rural electrification with its radios and other appliances. The telephone on the farm continued as a useful service. But during that particular phase in the evolution of American farm life—namely, from 1920 until the beginning of the great depression a decade later — it did not, admittedly, have the same indispensable quality which it had prior to 1920. Good roads even induced many farmers to move into town; planting, cultivating, and harvesting are being done on an urban dweller's "day's work" basis with a 15 or 20-minute drive at morning and evening to get back and forth between home and the job.[2] This is important to remember when we analyze the reasons behind the relatively slow recovery of the rural telephone when the depression did begin to lift about 1935.

When the depression really began to bite deeply into the American farm economy in the early '30's, it found the farmer's commercial credit pretty well extended. Many farmers were still under obligations for the purchase of automobiles, radios, and so forth. During that dark era, which hit the farmers in such sections as the "dust bowl" so directly and so menacingly, the farmer was obliged to liquidate his obligations and, all too often, his assets. But, by the same token, when the depression commenced to lift for the farmer—about 1936—he began to take on new obligations in the order of their indispensability for comfortable farm life.

It was not simply a choice of buying another car or else getting the telephone back. The relative price of these two items precluded such direct competition. But it turned out, however, that the farm telephone found itself at this point in *competition for the farmer's dollar* with a whole host of modern farm improvements — a newer radio, farm machinery, rural electric power and the numerous appliances that go with it to make it really serviceable, and, of course, the new car. Each such new purchase, large of itself for the modest cash dollar income of the average farmer, threw up an additional sales barrier against other older (perhaps less glamorous, at the time) items which the farmer had learned to do without during the depression years. At any rate, the record seems to show that old reliable farm telephone service had to take a back seat, temporarily, in the farm families' affections during this period when it was naturally anxious to accumulate all the newly available items which go to make up what we proudly hail as our American standard of living.

[2]According to sixteenth census of the United States, 1940, 9.7 per cent of the farms in the United States were unoccupied.

CHARLES F. MASON

But it would be wrong (and the more recent record clearly demonstrates that it is wrong) to assume that the American farmer ever intended to go along indefinitely without the telephone service he had had to surrender during the hard times. Chances are he simply put the telephone in the back of his head as one of those nice things he would like to have just as soon as he could conveniently get around to it. After all, he probably figured the telephone service would always be there waiting for him, but if he didn't get in on all this important new stuff which was coming off the consumer producing lines in those prewar days, he might "miss out" on it for a long time. (Indeed, subsequent developments since the beginning of the war to date suggest that he may well have been right, at that.)

Let us look a little closer at the chart on the trend in rural telephones. It contains some interesting implications about American farm telephone economics. These might be summarized as follows:

(1) Rural telephones already had begun to drop *before* the depression. During the decade from 1920 to 1930, there was a substantial reduction of about 350,000 stations.

(2) The real drop came during the depression era, from 1930 to 1935, when approximately 650,000 rural telephones were taken out of service.

(3) The telephone recovery was a slow one for the first five years after the depression low—slow in comparison with the sale of automobiles and other farm expenditures.

(4) The rural telephone recovery has picked up momentum considerably during the five-year period from 1940 to date, which is especially noteworthy in view of the wartime restrictions. Based on industrial estimates, we now have about 2,400,000 rural telephones, which compares favorably with what we had in 1930.

Before looking at future prospects for getting back all the 2,750,000 rural telephones we once had—way back in 1920—it may well be in order to consider possible explanations for the decline and why it took place in the manner and shape it did. Let's see.

Can the loss be due to reduction in

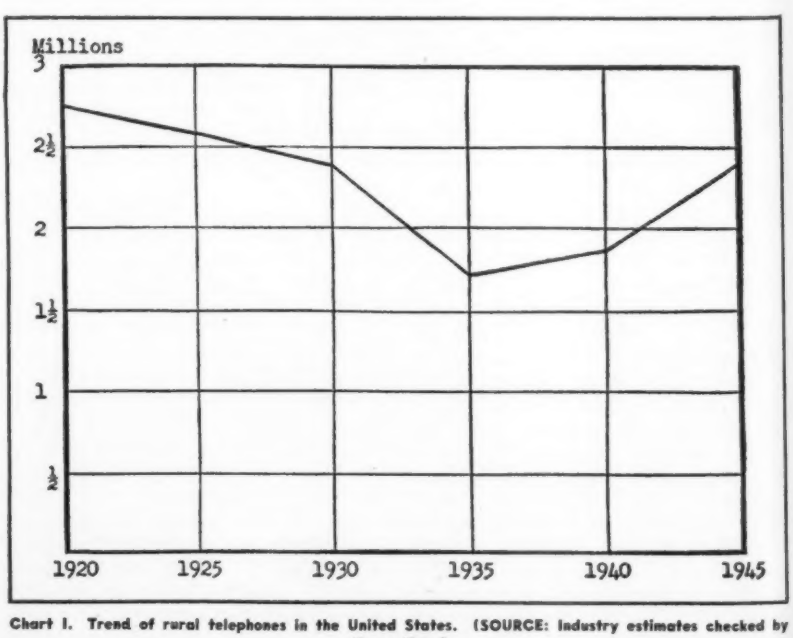

Chart I. Trend of rural telephones in the United States. (SOURCE: Industry estimates checked by the author.)

the number of farms, through abandonment or consolidation? The answer to this is probably "no." We hear this reason given often and it may have some substantial application to certain local situations, such as badly hit "dust bowl" counties which have not yet recovered from the wave of farm desertions. According to United States Census Bureau reports the total number of farms in the United States *increased* from 6,448,343 in 1920 to 6,812,350 in 1935 during the very period when rural telephones dropped from 2,750,000 to 1,760,000 or 36 per cent. Contrariwise, between 1935—the low point of rural telephone service—and 1940 farms *decreased* to 6,096,799, an over-all decrease of about 5.4 per cent. Such decline has apparently continued since 1940. A joint U. S. Census and Agriculture estimate as of April, 1944, showed a total of only 5,500,000 farms. The regular 1945 farm census, now in progress, may well show a further reduction as of the current year. *This means that during the past decade, while the number of farms decreased more than 20 per cent, the number of rural telephones increased nearly 38 per cent.* It is the "upstream" character of this rural telephone recovery which is remarkable.

Could rural service rates be responsible for the decline in rural telephones? This theory has been suggested by a recent staff publication of the Federal Communications Commission[2] based on data shown in the accompanying table on this page. A careful study of the situation, however, does not bear this out. Note from this table that the period of sizable increase in rural rates (1910-14 to 1924-29) occurred during the earlier period of relatively slower rural telephone reduction. On the other hand, the period of the big drop in rural telephones (from 1930 to 1935-36) was the period during which rates actually were reduced. Unfortunately, there are no later official figures on rural telephone rates, or they certainly would indicate the rural rates have gone even lower during the 1935 to 1940 period, because that was generally an era of rate reduction. Since the war there has been little change. During the period from 1935 to 1945, farm telephone use, as we have noted, recovered substantially. The plain inference is that rural telephone rates, *per se*, have had little effect one way or the other on the over-all trend in the number of rural telephones, especially when considered in the light of price trends for all other commodities the farmer must buy. No, we must look further than rates for our explanation.

[2] "Preliminary Studies on Some Aspects of the Availability of Landline Wire Communication Service," Washington, D. C., October, 1944.

INDEX OF PRICE PAID FOR FARM SERVICE COMPARED WITH OTHER COMMODITIES FARMERS MUST BUY
(1910-14 = 100)

	1910-14	*1924-29*	*1932*	*1935-36*	*1943*
Index of average price paid by farmers for all commodities...	100	155	107	124.5	167
Average monthly charge per telephone for rural party line service by urban commercial company					
Index	100	128	137	136	—
Actual charge	($1.39)	($1.79)	($1.81)	($1.80)	—
Average monthly charge per telephone by rural company					
Index	100	131	134	130	—
Actual charge	($1.28)	($1.68)	($1.70)	($1.67)	—
Monthly assessment per telephone by farmers' mutual company					
Index	100	136	133	127	—
Actual charge	(69c)	(96c)	(92c)	(88c)	—

SOURCE: *U. S. Department of Agriculture, "Income Parity for Agriculture."*

Could rural telephone service itself be responsible for the decline in rural telephones? All things considered, the chances are that the average standard of rural service was not the primary cause of the overall drop in rural telephones. It might explain to some extent the drop from 1920 to 1930. During this period a great many of the old farmer mutual systems, which were started with rather primitive equipment early in the century, began to wear out. It was a period of consolidation, during which commercial companies with superior standards of service began to take over some of these older lines. Others were in such shape they were simply abandoned. Incidentally, this helps to explain the increase in rural rates which took place in this period. Telephone companies were expanding and modernizing their service and the overall "trend" in rates was upward as a result. Magneto service, grounded lines, old-style desk sets began to give way to more up-to-date designs and techniques. It is important to make this distinction, however:

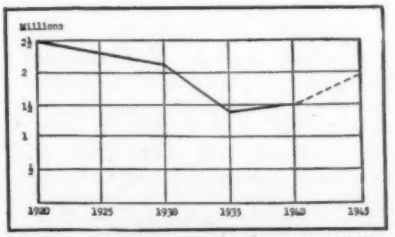

Chart II. Trend of farm telephones. (SOURCE: Department of Agriculture census for years 1920, 1930 and 1940 with industry estimates for other years.) For the distinction between "farm telephones" and "rural telephones," see footnote on page 13.

While rural service may not have been mainly responsible for the big drop in rural telephones, it may be partly responsible for the delay in recovery. The farmer put up with a lot in the way of service before he had to let the old rural telephone go because of other reverses. But he well may expect better service before he takes it back. More about this later on.

Could overall farm prosperity be chiefly responsible for this decline in rural telephones? The answer to this question seems to be largely "yes." As we have seen from our earlier discussion, the big drop came with the depression and the curve straightened out as soon as the depression started to lift. A study of farm income by states brings out this truism, even more strikingly. For example, there are two farm states which for many years had about the same level of telephone rates; the percentage of farms with telephones was 40 in one case and about 15 in the other. But consider this: The average value of farm products in the first state is about $1,500 and in the second state is only about $700. An article in the winter (1944-45) issue of *Bell Telephone Magazine* (page 216) shows in chart form approximately the following relation:

Annual Value of Farm Produce	*Percentage of Farm Telephones*
Less than $1,000	12 to 30
$1,000— 2,000	30 to 40
2,000— 3,000	40 to 54
3,000— 4,000	54 to 62
4,000— 6,000	62 to 64
6,000— 9,000	64
Over 10,000	68

What's stopping the telephone industry from catching up with its former level of farm telephone coverage and passing it? First of all, nothing is stopping it. The recovery to date, although admittedly slow in the 1935 to 1940 period, has been especially encouraging since then, in view of the war conditions and the fact that total number of farms was diminishing. But the objective of the industry is not and should not be merely to serve the farms served in 1920. The objective ought to be to serve at least 4,000,000 farms out of the present total of some 6,000,000. The remaining 2,000,000 represent a more or less marginal type on which it hardly would be realistic to look for serious prospects for telephone service. I refer to poorer grade tenant farms where the total cash income might be less than $500 a year, for example. Further, I would not give up even on them. Maybe with constant study and improvement we eventually can rig up a service low priced enough to do business even with this modest type of farm.

But, conservatively speaking, referring only to what we know is "in sight" by way of rural telephone improvements and development, I think the industry first might settle for a 4,000,000 farm goal, or two out of every three farms in America. After that has been obtained, we can, perhaps, go after the balance. Certainly, the fact that 80 per cent of all rural families in the United States are located either along existing pole lines or near enough so that service can be carried to them without special construction charge would indicate that the telephone industry is "all set to go" on this program of furthering expansion.

What steps would be necessary to hasten the recovery of rural telephone subscriptions and progress toward a 4,000,000 goal? It would be, obviously, a presumption for the present writer, despite his long service in the telephone industry, to attempt to write any precise prescription for hastening the recovery of farm stations to the 1920 level or the 4,000,000 farm goal. As one man's opinion, however, here are certain steps which seem to be necessary ingredients in the program. They are set down chronologically rather than in the order of importance:

(1) Technical planning and research in aid of rural telephony.

(2) Removal of wartime material and man-power restrictions.

(3) Connection of present "held orders."

(4) Rehabilitation of present central office and outside plant system.

(5) Installation of new rural services according to plan.

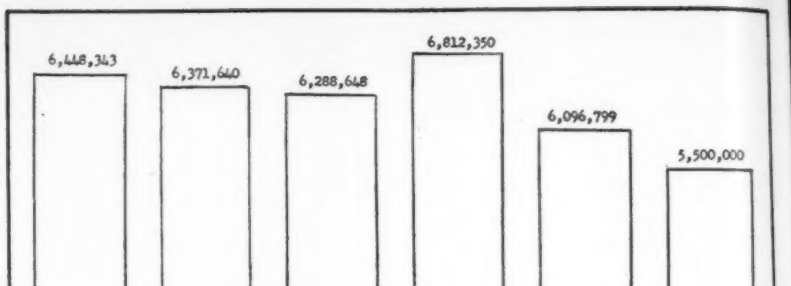

Chart III. Comparison of total farms in the United States with rural telephones, 1920-1925. SOURCE: Total farms from U. S. Census, 1920-1940. The 1945 total is an arbitrary carry-over of a preliminary estimate by U. S. Census-Agriculture as of April, 1944. However, the 1945 farm census now in progress well may show an even further reduction. Black portions indicate number of rural telephones from industry estimates taken from Chart I.

(6) Development of new service features.

(7) Progressive adjustment of rate structures.

(8) Aggressive sales campaign stressing "community spirit."

Is cheaper financing the real bottleneck to such a program, especially for smaller telephone companies? Such a program obviously costs money. Furthermore, the fact that rural telephone prospects lie largely in the areas served by the smaller Independent companies and cooperatives has prompted this question. About one-third of rural telephone areas will have to be serviced by the small-sized Independents.

The Bell System, which plans to spend $100,000,000 on rural telephones in from three to five years, and the larger Independent companies doubtless will be able to finance their own requirements. But these smaller companies may require some assistance. One form of assistance, already referred to, is the proper adjustment of rates. Some of these little companies are charging the same rates they charged a quarter of a century ago. Meanwhile, the price of everything else has gone up. There is no equity in this. The American farmer will not hesitate to pay a reasonable rate if he knows it will bring him better service, and that, of course, is exactly what is on the program.

If adequate rates are permitted, it also must follow that the purchase of new facilities can be financed through available credit facilities, even for these small companies. It may be that some advisory or special financing arrangement can be worked out within the framework of the present business-managed telephone industry and our available American banking industry. But it stands to reason that if the telephone industry, including these smaller Independent companies, was able to establish itself in the first place and grow to its present position without recourse to any other than regular commercial credit facilities, it certainly ought to be able to repair and extend existing plant without asking for help. The Independent telephone industry has never had to beg a nickel gratis, or require subsidy, in all its long and honorable history. It certainly should not have to start now when we stand on the threshold of easier man-power and material supplies and while money rates are still a lot cheaper than they were when these systems were constructed. Best evidence of this is the fact that the Independent industry has repudiated the suggestion that outside help is needed.[4]

Is a federal lending program similar to the REA necessary to bring the rural telephone back and obtain a bigger rural telephone goal? There are a

lot of people in this country who seem to think that you can save a starving dog by cutting off a piece of his tail and feeding it to him. If all the federal aid programs proposed in this country, to help this class and that class, were added together and put in execution, none of us would have to do much except sit around and draw government checks which would be worth nothing because the government would be broke. We'd be like the three proverbial castaway Chinamen who made their fortune (on paper) doing each other's laundry.

If there is one thing that is *not* needed in this program of bringing back the rural telephone and pushing it ahead, it is a plan for bringing in a horde of politicians who only would complicate and probably delay accomplishing the industry's program. In all probability such a plan would undermine the structure of the entire business-managed telephone industry which to date has *given the United States more telephones than all the rest of the world put together, more farm telephones than all the rest of the world put together, better service than all the rest of the world.* Whistling for the politicians to take over when we already possess, far and away, the very best system of its kind in the universe, just as the industry is on the point of doing the job, seems about as sensible as bringing circus clowns into an operating room to help out an established surgeon while he is in the middle of a critical but very promising operation. If this sounds a bit rhetorical, let us set forth numerically seven reasons why the rural telephone problem needs no federal aid setup similar to the Rural Electrification Administration to promote the spread of rural telephony:

(1) The business-managed telephone industry is already well on the way towards providing adequate service in rural areas. As shown in the table, it is nearly back to the pre-depression level, and as soon as the "wraps" are removed by the release from various strictures, it is quite likely to overtake the old 1920 high point. With things in this promising condition, why take the chance of rocking the boat with the introduction of a brand of political activity which the industry plainly has shown it did not ask for and does not want?

(2) Unlike the REA program, which dealt with the construction of new plant in rural areas where power lines did not exist before, it is a fact that there now exists a vast amount of idle and useful telephone plant ready to be connected through the fairly simple procedure of stringing drops and installing instruments in the farm homes. There is clearly no comparison here with the complicated problem which REA faced in 1935.

(3) If REA experience is a precedent, it is quite likely that the establishment of a rural telephone administration, or some such federal loan agency, would soon after result in quarreling, if not open warfare, within the telephone industry. The promotion of subsidized, tax-free public and semi-public telephone business probably would disturb the whole telephone industry picture by starting territorial disputes and bring conflict into an industry which is now more peaceful and cooperative than ever before in its existence. The end of this road, of course, is the introduction of public ownership, *per se*, in an industrial field where it does not now exist. Advocates of federal aid may say this would not happen. But it has happened in the case of REA in its relation to the electric companies. What right have telephone companies to expect that they would come off any differently? Remember, the REA law was theoretically designed to aid private companies and public bodies alike in development of rural electrification. The result (19 private company borrowers out of 904 total REA borrowers) speaks for itself.

(4) The telephone business differs from the electric and water utility enterprises in that it requires an integrated nation-wide objective which does not so greatly concern these other more regional types of public utilities. The telephone business is not conducted on a "bulk delivery" basis. It is private, personalized, and requires uniform standards of transmission and fidelity throughout the length and breadth of the land. These are qualities which cannot be obtained simply by pouring money into the job. American telephone service has earned and won the confidence of the public because of its efficient, courteous, and confidential character—qualities which certainly could not be guaranteed if public agencies were to begin to take over even limited rural operations. Anyone who has used government-owned and operated telephone service in Europe will bear this out.

(5) Why put another drag on the federal taxpayer when it isn't needed and the parties most immediately concerned (in this instance the telephone industry) not only do not ask it but do not want it? Certainly there are enough demands from multitudinous quarters for federal assistance without ramming it, gratuitously, down the throat of the business-managed telephone industry. We will be doing the American taxpayers a service if we block this step, because we know in the end it is going to cost Uncle Sam some money. It is all very well to talk about these being loans rather than grants. REA loans have a good record of repayment to date, but REA was launched just as the depression was lifting and farm earnings began to come back, thanks to the other forms of government aid to farmers. The earlier record of repayment of federal aid in rural areas for reclamation projects is pretty miserable. So even if most of these loans were paid up (according to avowed terms of cheap federal loan contracts), we could be pretty sure that in the long run there would be a nice bill in it somewhere for the taxpayers to pick up the slack.

(6) Assuming federal loans for rural telephones would be repaid 100 per cent, how could this happen on any other basis than would likewise yield a fair return to the business-managed industry now ready, willing, and able to carry on without such gratuitous assistance from the government? Any self-liquidating operation, whether it be sponsored by government or by private enterprise, must produce compensatory revenues. Supplying funds to keep from being a subsidized or characteristically losing business ultimately will fail regardless of whether government or the industry embarks on the business. Taxpayers should not be obliged to engage in any program which contemplates a perpetual government subsidy.

(7) The business-managed telephone industry's ability to render adequate service to the rural areas, if unhampered by political interference, is bound to be better and cheaper. We know the industry is alive to the need for increasing farm telephones and already has developed promising technological improvements which are quite likely to result in better and cheaper service. Any administrative agency with overhead costs of millions of dollars a year is simply an unnecessary and expensive complication in this picture.

Are there any ways in which the government can or should help the business-managed telephone industry with the rural telephone problem? Yes, there are three ways in which the telephone industry rightfully may expect such aid from its federal government without sacrificing a speck of its own dignity as a private enterprise. *First,* the federal government can help to spread rural telephones by helping to make it possible for the farmer to be successful in his own business. We have seen that rural telephone coverage operates in proportion to farm prosperity. If the government must help the farmer, let it do so in such a way that the farmer can pay for his telephone service, instead of doing it in a way that the government may end up *operating* the farmer's telephone service.

Second, the Federal Communications Commission should see to it that no regulatory obstruction is placed in the way of the telephone industry's use of radio frequencies in the development of possible radio-telephone equipment for farm service. In all fairness it should be said that the FCC has shown a fairly sympathetic attitude in this respect.

Third, perhaps most important, instead of talking about spending federal money to bring more telephone service to the farmer, the federal government would be well advised to spend some money to keep the REA from in-

[4] At a meeting of presidents and other representatives of most of the state telephone associations recently held in Chicago, it was unanimously decided that Federal Rural Telephone Administration as proposed should be definitely opposed by the Independent telephone industry. The board of directors of the United States Independent Telephone Association at a meeting held the following day took similar action.

juring the existing telephone facilities which bring service to the farmer. The reference is to inductive electric interference which has wrecked a number of small rural telephone systems which previously rendered satisfactory service. Private power companies have settled these questions peacefully with the rural telephone companies by sharing the cost of corrective measures necessary to avoid damage to previously established telephone service through the construction of rural power lines. The REA, depending on legal grounds, often successfully has evaded this moral obligation. If it is right and just for government highway authorities to share the cost of separating grades to help out previously established railroad operations, it ought to be equally equitable for REA borrowers to share the cost of repairing the damage which rural power lines may cause through inductive interference with established rural telephone operations.

What is meant by aggressive sales campaigns and appeal to "community spirit" in promoting rural telephony? It ought to be clear from the foregoing discussion that the telephone industry is going to have to do a smart sales job in restoring telephones to rural subscribers and selling new ones. Of course, the industry's program obviously intends that it will have something better to sell the farmer than the old "whoop 'n' holler" wall set he may have thrown out in the front yard, the last time he had a quarrel with the telephone company over service or bills, or both, during the moody days of the depression. Assuming that new service features will make salesmanship easier, there still remains the need for appeal to the farm community as a farm community to get back into the telephone family.

One of the most unfortunate features of the wholesale abandonment of rural telephone service during the depression was the fact that every time one farmer checked off the line it made the service so much less useful for his neighbors. As more rural patrons began to desert the service the "loss of service value" factor had a cumulative effect. It is going to be equally difficult to turn this around and start it in reverse when active selling gets under way. When Farmer Jones' wife gets a new refrigerator or washing machine she doesn't particularly care whether Farmer Brown's wife down the road gets one and she might even get a little satisfaction about being the first in the community to have such an electric appliance. But when Farmer Brown's wife gets a telephone back and there are—let us say—10 farm families in a very small rural community, it is clear that Mrs. Brown has an immediate interest in Mrs. Jones getting in a telephone so that she can talk to her neighbor. Every time a new subscriber comes on the line the "community value" increases 10 per cent for the other subscribers.

I can visualize that sales promotion in the future will have to emphasize this "community spirit" factor. It must be said that the REA has given us some good examples of sales technique along this line. If farmers can turn out for mass meetings operated like old-fashioned picnics, with refreshments and entertainment features, to consider getting in REA electric service they can do the same thing for telephone service. The community spirit is there. It needs only the right kind of tactful promotion to bring it out in full blossom. The result would be not merely signing up individual farmers, after repeated hem-and-haw personal interviews; it would mean signing up the whole community of farmers under circumstances where they might feel they were poor sports not to get together and join their neighbors.

In addition, the sales promoters will sell the farm telephone on the basis of its commercial value. Detailed commercial surveys already made among some farm subscribers show the dollar savings — the gasoline not used, the miles not driven, the time not lost, the sales of farm products made at best prices—all by the use of the telephone. This is reducible to dollars per month per average farm subscriber in an area and the results are conclusive and sometimes startling as to the dollar savings realized in relation to the cost of telephone service.

What service improvements are in the offing for the rural subscriber? Space will permit summarizing only a few of the things which are "on the menu." One of the most fascinating is the so-called "carrier circuit" type of service which the telephone industry, notably the Bell Laboratories, has been improving in collaboration with private power companies and REA. This is merely the imposition of a "hitchhike" telephone conversation which travels along the regular power line and into the farm home where it is transformed into telephone service through a regular telephone instrument. This happens without interference with the ordinary functions of the power line. Another of the various possibilities includes the radio-telephone, suggested by the Army's "walkie-talkie," whereby the isolated farm house might talk over radio beams to the nearest land wire telephone terminal. By and large, however, rural telephone service is likely to remain principally on a land wire basis; but even here there are good things ahead.

For example, plowed cable, which does away with the maintenance and unsightliness of pole lines, is in a promising state. There is also selective ringing, whereby the old-fashioned and somewhat maddening code ringing of farm telephones will be cut down, if not entirely cut out. The selective ringing improvement, now in operation in many areas, gives the farmer a personal ringing service comparable to city party line service.

Finally, and most important, perhaps, in the future of truly improved telephone service, is the possibility of extending the rate base switching area coverage of the farmer's individual service. After all, it is the value of service which determines the reasonableness of the rate. If a farm subscriber can talk to more people in a wider area, the service cost is cut more and more. Along this line we are given a very promising prospect in the installation of very small dial switching units near groups of farms, giving the farmers and their families more direct communication among each other and reducing the amount of line wire required to connect them to their telephone exchange. The postwar outlook for increasing the usefulness of this arrangement is already being investigated.

Public Handouts Road to Poverty

The question of tax reduction rests entirely in the hands of the people. The National City Bank of New York sums up the situation accurately when it says that the extent of the reduction in the tax rates will depend on how far the people are willing to go in reducing government spending after the war. The bank says: "The American people need to get out of the habit of trying to solve every economic problem by running to government for some kind of subsidy or financial guarantee, the sum totals of which easily run up to staggering amounts."

A Selected List of Telephone Books

In this war emergency knowledge is needed to help achieve victory. Technical books and information assume greater importance as a means not only of better fulfilling our niche in the war effort but of self-improvement. From this list of telephone books, with brief statements of their contents, employes may find one or more they will want to secure for study and reference.

• ***How to Build and Repair a Farm Telephone Line*, published by Telephony Publishing Corp.**

Eight-page booklet, unbound, 25 cents per copy to non-subscribers of TELEPHONY; special prices available to subscribers and to anyone ordering 25 or more booklets. This booklet, well-illustrated with photographs and diagrams, tells what was done to place a run-down farm line in good condition to furnish excellent service. The text describes how to attach wire to an insulator, how to attach brackets, how to set a pole, how to string wire, how to make a splice, how to protect telephone line from power line hum, how tree branches touching wires hamper transmission, how to connect drop wire to line wire, how to attach drop wire to house, how to connect house line to telephone, and how to connect the ground rod. The materials needed for a farm line are also listed.

• ***Rural Telephone Trouble*, published by Telephony Publishing Corp.**

Four-page reprint of an article published in TELEPHONY giving 33 magneto telephone and line troubles most commonly encountered, with suggestions as to the most likely cause of each —whether in the telephone set, the protector, the line, or the central office. Cost is 25 cents per copy to non-subscribers of TELEPHONY; special prices available to subscribers and to anyone ordering 25 or more reprints.

• ***Fundamentals of Telephony*, by Arthur A. Albert (1943) 366 pages $3.25**

This elementary book, intended for beginning students and for telephone workers, is devoted exclusively to telephone communication. The first four chapters present briefly the principles of electricity and acoustics upon which telephone practices are based. The book then considers the following subjects: Telephone transmitters, receivers, telephone sets and circuits, telephone lines, manual telephone systems, dial telephone systems, loading, telephone measurements, noise and cross-talk, and repeaters and carriers.

• ***Electrical Fundamentals of Communication*, by Arthur L. Albert (1942) 554 pages $3.50**

This book deals with fundamentals of electricity as applied to communication, including telegraphy, telephony, and radio. Contains basic electric circuits and phenomena using illustrations, terminology and problems from communication industry standpoint. Contains tables and 359 excellent drawings; is non-mathematical and clearly written for communication people having little or no college training. Especially suited for use in telephone training courses for new employes. Also valuable for employes who wish to extend their knowledge of electricity. A summary as well as review questions and problems given at end of each chapter.

• ***A Telephone Rate Case*, by Edward D. Smith (1941); 223 pages $5.00**

Written simply and clearly by an attorney for a telephone company, this book gives a bird's-eye view of the general rate regulatory background, and then outlines the steps for preparing a telephone rate case. Company executives as well as legal counsel dealing with rate matters will find much valuable and helpful information in the book. There is a comprehensive table of case references.

• ***Soldering for Workshop, Farm and Home*, by John Bonert (1941); 111 pages, 28 illustrations $1.25**

Valuable soldering information for telephone plant men, particularly apprentices, is presented in this book written by a telephone man with years of practical experience. The book discusses soft soldering, fluxes, tinning, soldering coppers, wire splices, soldering on lead, closing seams in a split cable sleeve, soldering and sweating with a torch, joints, hard soldering or brazing, construction of a soldering copper holder and pad, etc. No scientific terms or complications have been used in the book, which is intended to help the beginner or to refresh the memory of an experienced worker.

• ***Electrical Communication*, by Arthur L. Albert (1940); 534 pages (second edition) $5.00**

Presentation of electrical theory of communication, including vacuum tubes, networks, filters, and discussion of entire industry. Various subjects considered as related to one another in modern communication systems. Designed as a college textbook and reference book for those having technical training. Others will find much of value in it, as use of mathematics has been limited but not at a sacrifice of engineering exactness.

• ***Transmission Networks and Wave Filters*, by T. E. Shea (1929); 470 pages $6.50**

A specialized book which deals with principles of transmission networks, electric wave filters, and composition of transient waves. It is intended for student engineers or graduate engineers.

• ***The Analysis and Presentation of Engineering Problems*, by Dr. Harry C. Walker (1945), 199 pages $2.50**

A set of two volumes: Volume I, Principles (99 pages, $1.50); Volume II, The Mechanics of Presentation (100 pages, $1.50). May be purchased separately or as a set. The first volume applies the principles and practices of scientific problem-solving to the problems of engineering and shows how the engineer may maintain a logical critical attitude in spite of emotional bias. The second volume assists the engineer in developing a particular style of composition and in choosing diction especially appropriate to the exposition of his problems.

• ***Fundamental Electronics and Vacuum Tubes*, by Arthur L. Albert (1938) 422 pages $4.50**

The increasing use of vacuum tubes in telephone work makes this non-mathematical book of practical value to persons in engineering and operating branches of telephony. The book discusses the principles of electronics and the theory of vacuum tubes, photocells and copperoxide varistors in telephone circuits and radio. It delves into the theory of these devices and the design and operation of circuits in which they are used.

• ***Electrical Engineers' Handbook*, electric communication and electronics, volume 5, by Harold Pender and Knox McIlwain (1937); 878 pages $5.00**

This reference book for communications engineers contains engineering data and formulae concerning modern networks. Discussions are presented of telephone circuits (local, toll and program facilities), radiotelephone systems, and high frequency transmission, profusely illustrated with line drawings as are the other sections. These sections include acoustics, telegraphy, sound-reproduction systems, facsimile transmission, television, electronic control and navigation equipment.

• ***Communication Engineering*, by W. L. Everitt (1937); 727 pages (second edition) $5.00**

Book designed for engineers and those with technical training; gives fundamental principles of telephone, telegraph and radio communication without going back to the beginnings of the entire electrical engineering field. Transmission networks and circuits, involving coupled circuits, impedance transformations, equalizers and bridge circuits are treated. Inductive coordination is discussed with the latest theories for minimizing interference. Discussion is given of other links in the circuits which make possible radiotelephony or carrier-current systems, including vacuum tube detectors and amplifiers. Mathematical ideas, beyond calculus, are introduced just before they can be applied.

• ***Inductive Coordination of Electric Power and Communication Circuits*, by Laurence Jay Corbett (1936); 161 pages $3.00**

This excellent book discusses the nature of power transmission and of communication transmission, the effect of magnetic and electric induction and various influence factors. Susceptiveness and coupling factors, effects of conductor arrangements, transpositions in power and communication circuits and their coordination, power system wave shape, control of residual voltages and currents and many other phases are discussed. This book should contribute to a fuller understanding by power and communication engineers of each other's problems.

• ***Telecommunications — Economics and Regulation*, by James M. Herring and Gerald C. Gross (1936); 544 pages $5.00**

Dealing primarily with the economic and public service aspects of the communications industries, the major purpose of this book is to evaluate existing state and federal regulation in the light of the requirements of national policy, as determined by the present federal administration. The subjects covered include the growth and development of the telegraph industry, submarine telegraphy, the telephone industry, the development and history of radio communication and broadcasting, state and Federal regulation of the communications industries.

• ***Telephone Theory and Practice*, by Kempster B. Miller (1933); 1414 pages $15.00**

A set of three volumes, "Theory and Elements" (1930, 468 pages, $5); "Manual Switching and Substation Equipment" (1933, 439 pages, $5); and "Automatic Switching and Auxiliary Equipment" (1933, 494 pages, $5). Volumes may be purchased separately or as a set. This series replaces "American Telephone Practice" by the same author, published early in the century. The set comprises an excellent source of accurate information of entire subject of telephony.

• ***Elements of Utility Rate Determination*, by J. M. Bryant and R. R. Herrmann (1940); 464 pages $4.50**

Based on tested and workable methods, this book discusses factors, methods and problems of evaluating public utility property and service for rate-making. The essentials of valuation, depreciation, expense, return, etc., as factors in establishing proper rates for various utility rates are given. Citations presented from background and key cases decided by commissions and courts.

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608 So. Dearborn St. Telephone: Wabash 2435 Chicago 5, Ill.

BY FRANCIS X. WELCH

TELEPHONY'S Washington Editor

Second and final article on Trend Towards Federalism. . . . The way to stop such a trend is to reinforce the will of the people through their chosen representatives. . . . We must practice democracy; we must have a Congress, Supreme Court and President who will let us practice it.

THIS is the second and final "preachy-teachy" article in this department on the broad subject of government trends. It was forecast in the TELEPHONY issue of July 7 when this writer "viewed with alarm" the Trend Towards Federalism which he said was a one-way street heading towards state socialism. At that time, a more hopeful sequel was promised by way of examining the possibilities for arresting this trend in the light of certain favorable and practical circumstances now apparent on the Washington scene. Well, here goes:

The Trend Towards Federalism, it will be recalled from the previous sketch, operates in this country in three ways: (1) subordination and discredit of Congress by an increasingly powerful executive branch, aided and abetted by a servile Supreme Court; (2) subordination and discredit of state government by a federal government, through direct federal aid to various classes, such as farmers, amounting to a bribing of the people with their own money to obtain supremacy and dependence upon Washington; (3) subordination and discredit of private enterprise by various types of discriminatory legislation (tax, labor, direct public ownership) calculated to encourage the growth of state socialism.

But even such a broad recognition of the Trend Toward Federalism in its domestic operation in the United States leaves the picture somewhat short. In other words, our Trend Towards Federalism is but a part of a *world-wide* trend towards totalitarianism, which has been going on in most countries for the past decade or more, and is still going on in some of them.

Failure to consider this is likely to lead to false conclusions. In this country, for example, there is some temptation to blame the long tenure in office of the late President Roosevelt as encouraging a strong movement towards federalism and the domination by the executive branch of the other branches of our government. This would, at most, be only partially true. It would not explain the rise of totalitarianism in defeated Italy and Germany or in victorious Russia, and even in some of our own "good neighbors to the South."

Many of us made the same mistake with respect to the great economic depression which started in the late 1920's, and the results were somewhat surprising if not amusing. All reputable economists understood that it was a world-wide depression. But it happened to catch labor government in power in England, a mildly liberal republican government in power in Germany, and a relatively conservative Republican administration in power in the United States.

The people of each nation blamed their troubles on the party in power, refusing to see or understand that it was but a part of a world-wide development. In England, the voters threw out a labor government and put a conservative government in power which has continued in power ever since. In the United States we did just the opposite. We blamed Herbert Hoover for the depression and installed a more left-wing Democratic administration. In Germany, of course, the people were so confused as to be taken over by the organized gangsters of Hitler. (In Russia, popular will to change government was, and is, suppressed for all practical purposes.)

The trend towards totalitarianism likewise is international and likewise misunderstood. It is misunderstood because people can develop a sort of blindness to it, the closer it gets to them. Americans think of totalitarianism as " something that happened in Germany and Russia but couldn't happen here because we have a repub-

lican form of government, subject to the popular will." But if the history of the past couple of decades has taught us any lesson, it should have taught us that certain virtues and vices of government are not peculiar to any form of government. A communistic state can be just as imperialistic, nationalistic and selfish as a capitalistic nation or as a fascist nation, if certain elements get in control. A republican form of government can gravitate towards totalitarianism and suppress just as many liberties as some of the other forms of government if it permits the trend towards administrative absolutism to continue.

Probably the most encouraging sign in Washington today is evidence of reawakened desire on the part of our people to re-establish our basic principles of constitutional government. Congress is asserting itself once more. A strong minority in the Supreme Court is beginning to cry out against the action of the majority in setting aside the intent of Congress in order to decide cases according to their own concept of what public policy ought to be. If the Truman administration and successive federal administrations are responsive to this resurgence of democratic opportunity there will be more appointments to the Supreme Court which well might swing the balance towards a truly independent judiciary.

Again, the people are showing signs of restlessness over the long siege of petty regimentation which has become necessary during the war. Probably no one will seriously argue that the troublesome rationing controls of the Office of Price Administration are not necessary during the war. We generally approve the more extensive materials and manpower restrictions of the War Production Board and the War Manpower Commission for war purposes only.

But we have, by our very experience with these restrictions, developed a psychology that will demand the removal of these restrictions as soon as the fortunes of war permit them to be removed. That is a step away from federalism—a step back towards individual liberty and initiative for private enterprise and the people who work for it.

To help and hasten developments along this line, clearer thinking on the part of many of our people will be necessary. We have fallen, perhaps, too much into the lazy habit of classifying everything that happens, or is suggested, as "liberal" or "reactionary" and "left" or "right" and acting accordingly. But what is "liberal," really? What is "conservative"? Here is a little test you can make on yourself. Read the following passage:

"For myself I prefer to entrust regulatory legislation of commerce to the elected representatives of the people instead of freezing it in the decrees of courts less responsive to the public will. I still believe that 'the courts are without authority to declare such policy or, when it is declared by the legislature, to override it.'"

That passage is an excerpt from an opinion by a justice of the Supreme Court of the United States—one no longer on the bench. Who do you think wrote that?

Read it over again, if you like. Consider the philosophy behind it. Certainly it is a liberal statement, written by one who obviously believes in democracy and is not afraid of letting the important decisions of our country be made by the people's own representatives in Congress.

It is in line with the position taken by a number of great American liberal thinkers both on and off the high bench. Was it the voice of Holmes or Brandeis? Or of Cordoza of such respected liberal memory? It could have been. All of these at one time or another voiced such sentiments and decided cases accordingly.

But the fact is that the foregoing was written by a judge usually classified as "right wing," or conservative. At the time of his recent resignation from the court, Justice Owen Roberts was generally accredited the most conservative member of the court. Some even called him "reactionary."

Anyway, that is what Justice Roberts wrote in his dissenting opinion to the Associated Press case several weeks ago. Why was he dissenting? Against whom was he dissenting? He was dissenting against the Black-Douglas-Murphy majority of the court which has shown such a pronounced tendency to indulge in judicial legislation, to edit the intent of Congress, and generally engage in decreeing their personalized concept of what the will of the people *ought* to be (as distinguished from what the Congress *voted* it to be).

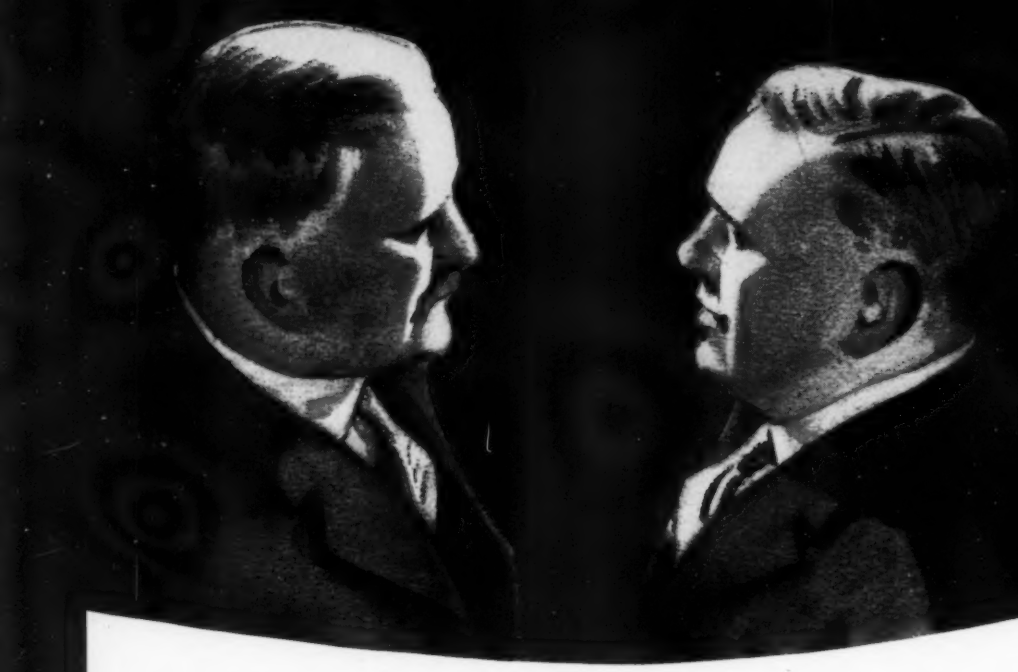
Yet today the Black-Douglas-Murphy wing of the court generally is thought of as "liberal." Here was Justice Roberts, writing in the finest tradition of the court's noble attempt to function as an objective and judicial minded tribunal, to restrain itself to the task of finding the law, rather than of writing it, or rewriting it, to suit itself. Yet, Roberts was called a "conservative" because he wanted to give full expression to the will of the people's chosen representatives in Congress. Black-Douglas-Murphy are called "liberals" although they would (and do) readily accommodate both the Constitution and laws of Congress to their ideas of what public policy should be. They presume to do this, despite the fact that being non-elected officials, they are not answerable to the people and, once appointed for life, they are not even answerable to the President. Only the cumbersome process of impeachment, generally designed for personal misconduct in office, remains to discipline the court and reinstate the will of Congress—a poor instrument for that purpose.

But let us get on with our consideration of more hopeful signs of a countertrend—one which may slow up, block and perhaps reverse this Trend Towards Federalism. Let us enumerate them, including the two already mentioned: (1) Congress is reasserting itself and the Truman administration seems willing to see this happen. (2) A growing minority of the Supreme Court is gaining popular support because it champions democratic processes. If the administration is sensitive to this trend, the court should improve as the guardian of our liberties. (3) The tax burden is making people more conscious of unnecessary government expenditures, especially it will do so after the war. (4) People generally are restless with unnecessary government regimentation and want it removed after the war emergency passes. (6) As the will of the people becomes more effective, it will become more responsible because it will have been freed from the weakening effect of paternalism. If this trend should continue, a return of real democracy would settle the Trend Towards Federalism the way it should be settled.

Possibly item No. 5, about the population trends, may occasion some surprise. The declining birth rate is not an unmixed blessing by any means. And there are some moral and international angles of it which should give us some concern. But from the standpoint of the need for more and more government regulation, it gives us an argument against the Trend Towards Federalism.

Sometime towards the end of the 1970's our national population, according to advance estimates, will begin to show its first definite total loss. For the first time since this nation began its history as an independent country, there will be less people in it than dur-

(Please turn to page 24)



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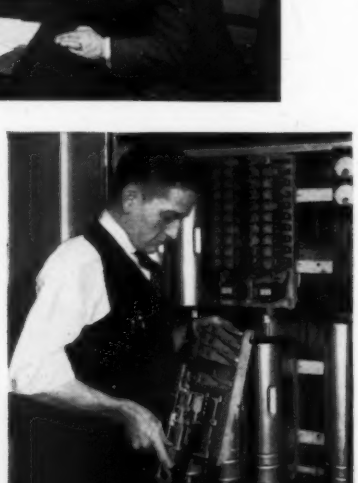

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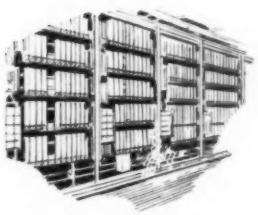
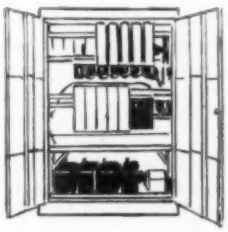
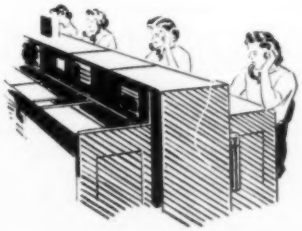


CENTRAL-OFFICE EQUIPMENT—Economically provides every wanted service, on a modern scale, in exchanges of every size, and with maximum flexibility for meeting growth or change in traffic or stations.



COMMUNITY AUTOMATIC EXCHANGES—These unattended dial exchanges make small exchanges profitable, solve the "operator problem," and improve service on both local and long-distance calls.



TOLL SWITCHING EQUIPMENT—To meet every modern operating requirement. Speeds up toll service, improves toll line efficiency, saves operating costs.

PRIVATE AUTOMATIC BRANCH EXCHANGES—Provide your business subscribers with fast dial connections on local calls, and improved service on city and long-distance calls.

ELECTRIC

Step-by-Step Machine Switching Automatic Dial Systems
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AUTOMATIC ELECTRIC CORPORATION

ing the preceding year; and these people will be comparatively older people.

The need for more and more regulation and interference by government in the affairs of people has been ably justified on the grounds of "increasing complexity of civilization." This means, in large part, simply an increased number of people trying to live in the same space. A century ago, for example, we did not need a host of regulations which are quite necessary in a modern big city. A century ago it did not matter whether a sidewalk gate swung in or swung out, whereas today the difference can cost you $5.00 in police court. Dog tags, fire escapes, plumbing codes, and literally thousands upon thousands of other health and safety regulations are necessary, today, simply because we have more people trying to live in the same space which a century ago was occupied by quiet, peaceful towns and hamlets—composed of detached homes with picket fences and dirt streets.

Now it is a fair question whether, in the diminishing phase of our national life there will be any *reverse* action—action looking towards *doing away* with some of the regulations which become unnecessary. In plainer words, will a nation with less people in it be able to get along with less laws and regulations? Perhaps not.

The birth rate of the French nation first turned down around the late 1880's and her national population has been dropping steadily since early in the twentieth century. Yet the number of laws and regulations in France has multiplied at an accelerated pace during the very period of diminishing population.

It isn't solely a question of population which requires laws and regulations. Increasing the tempo of civilization by such revolutionary improvements and discoveries as telephones, radio, moving pictures, automobiles, airplanes, and so forth, is a powerful breeder of laws and regulations. Every new invention drags behind, in its wake, a host of new problems which apparently we have been able to solve only by inventing new laws and regulations. Certainly there is no prospect of any letup in the number of new inventions and improvements in the years ahead, regardless of population.

Perhaps, also, the number of regulations may be due to the psychology of modern populations to look to law for the ultimate solution of every problem regardless of its nature. There is a tendency on the part of some protagonists for more and more law, and more and more regulation, to assume that such a trend is inevitable, whereas in fact it may be merely a phase or part of a cycle.

A few weeks ago this writer read a learned article by a serious young student in an academic publication which solemnly predicted that price regulation (now extended to utilities and temporarily extended to other commodities during the war) would inevitably and permanently be extended to all forms of commercial enterprise. This will come because, the author said, "the vanishing power of competition no longer guarantees the public against exploitation." This was announced with all the gravity of a great discovery of some profound economic truism.

Yet, in Lord Hale's time (1609-1676) all activities comprehended under what we call business was public and all of it subject to price control. Evidently competition in old England must have gotten a second wind because such regulation vanished instead of the competition in subsequent years. It would seem to indicate that what some of our learned young writers regard as inevitable simply might be a swing of the pendulum. The regulation of three centuries ago is no longer with us today. The regulation of today may be but a memory a century hence. It takes a thorough reading of history, in addition to competent analysis of contemporary events, to say what will or will not be the state of regulation a mere decade from now.

There is evidence, however, that a more mature population might raise more questions about the need for more laws and more government activities, despite purely technical innovations which may come in the future. After all, the obsession for settling every problem with another law or government board may be simply a form of laziness or lack of imagination. A radio engineer recently told this writer that nine-tenths of all the complicated work done by the Federal Communications Commission in the regulation of radio frequencies well might be worked out by experts within the radio and manufacturing industry and simply given effect by government authority. Government as umpire is all right. But the umpire should not play on the team.

A learned Spanish writer not long ago said about the same thing regarding all forms of government activity—even some activities of the police and fire departments. (He suggested that traffic control might be handled by automobile associations and fire protection effort by fire insurance companies.) This is carrying the "no government" idea to extremes, perhaps, but it is a fault in the right direction.

Much of our difficulty with the Trend Towards Federalism has been the unavoidable requirements of a series of emergency conditions, starting with the depression and lasting through the war. During such critical periods Congress perhaps works too slowly and the will of the people perhaps is confused—even temporarily misinformed. During such periods, people temporarily may approve of strong action being taken by central authority in order to get things done without too much fuss and conflict. But power once installed inevitably strives to perpetuate itself. A government installed during a crisis has a tendency to move from crisis to crisis until emergency itself is a form of normality.

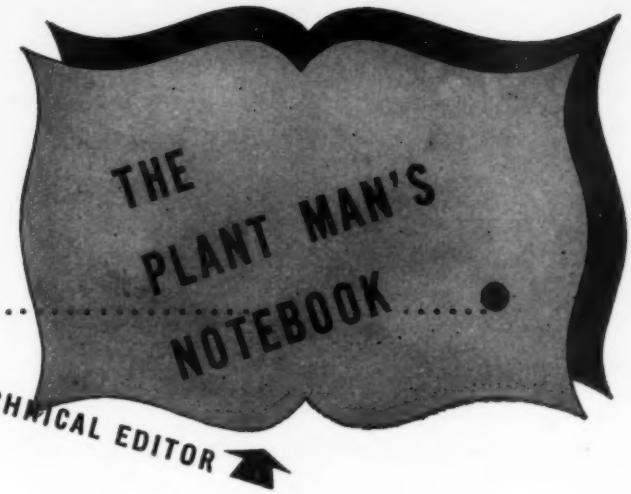
Over the long range, experience has demonstrated that the perfection of a totalitarian government can be the perfection of destruction. A democracy may make many mistakes, but a dictatorship only has to go off its course once. After that, the very perfection of its controls will accelerate and make inevitable the trip to disaster. Germany and Italy are good examples of this.

One of the most hopeful signs on the horizon right now is the Byrd-Butler Bill (S. 496) to regulate government corporations, which is likely to be reported by the Senate Banking and Currency Committee in the near future. A companion measure in the House (H. R. 2177), introduced by Representative Whittington (D., Miss.) has gotten through hearings before the Committee on Expenditures but is not now active. The bill would provide for congressional control and audit of all government corporations, including TVA, upon which opposition principally has centered. It also would forbid the creation of government corporations by presidential fiat or in any other manner except by act of Congress. Also, failure of Congress to reincorporate government corporations now existing would result in their automatic liquidation as agencies of the United States.

* * *

Summarizing, it would seem that the Trend Towards Federalism is really a departure from our basic principle of democracy. Its remedy, therefore, will lie in a return to democracy. Democracy cannot operate through the medium of an overall plebiscite given for some popular leader every four years or more, without any opportunity to examine and discriminate between the various multiple actions he has performed, day in and day out. Nor can it operate in the other extreme, whereby an uninformed electorate is supposed

(Please turn to page 32)



BY RAY BLAIN • TECHNICAL EDITOR

A RECENT War Department press release stated that, in general, captured radio sets and other communication equipment of German manufacture reveal considerable originality of design. Those of Japanese make, on the other hand, are composed of a curious mixture of German, American and British design, and often are of a type the United State Army would consider obsolete.

* * *

One of our readers has inquired as to where steel tape on tape armored, buried cable should be bonded to the lead sheath. In our opinion, when a splice is made in this type cable, the steel tape should be bonded to the lead sheath on each side of the splice. This provides continuity of the steel tape which is considered necessary in order to reduce the possibility of electrolysis trouble. When steel tape covered cable is spliced to underground lead covered cable encased in conduit, the tape also should be bonded to the lead sheath.

* * *

It is claimed that a much greater range of low and high ground electrical resistance testing is provided by a new model vibrating type ground tester. While it gives accurate readings for all ground conditions, it particularly is adapted to arid or wet regions or where extremes of dryness or moisture are found.

The installation and maintenance of adequate ground connections is so important in the telephone industry that a dependable ground resistance tester is considered essential equipment in all exchanges, regardless of their size.

The new model has four ranges: 0-3, 0-30, 0-300, 0-3000 ohms. It comes complete with self-contained power supply which eliminates hand cranking. With its direct readings no calculations are necessary, reverse readings are unnecessary and polarization errors cannot occur. The design also excludes strays from high potential networks, DC ground currents or any AC commercial frequencies, and other sources encountered in plant or field. It is asserted that a complete test, including setting test rods, can be made in less time than by any other available means.

The one-piece welded metal case is watertight, assuring accurate readings even on sodden ground. It is light and easily portable.

* * *

It has been revealed that a fast talker may read from 150 to 250 words per minute over a good telephone line in understandable fashion. This is faster communication than can be provided over the average telegraph channel.

* * *

Cable distribution systems should be engineered carefully to provide maximum flexibility without making costly changes in the count. Branch cables and terminals may become filled long before the cable, as a whole, becomes congested. This condition should be avoided as far as possible by making accurate forecasts of station growth and engineering the cable distribution system accordingly.

* * *

A small, battery-operated portable amplifier has proved useful in connection with cable fault location by the tone and exploring coil method. This amplifier ordinarily is three stage resistance coupled with an output transformer in the last stage. The gain is approximately 50 dbs and is practically flat from 100 to 4,000 cycles.

* * *

Considerable comment now is heard concerning "music at work" programs and how they have increased war plant production. With work music properly planned and programmed, one such plant increased a prior record man day production of 9,608 units to a new high of 11,484 units. A later check confirmed these findings when music was played for 25 days and the operators produced at the rate of 23,563.34 components per man days. When the music was discontinued for six days, the output dropped to 19,878.81 components.

It would appear that the "music at work" wartime production record has earned a favored position in postwar management and labor plans for factory improvement. In many sections of the country, the writer believes, telephone companies could arrange to provide this service to manufacturing plants, thereby increasing their revenue.

* * *

A former telephone man now on duty in Calcutta, India, recommends reading Beverly Nichols' *Verdict of India* for those interested in that country's affairs.

* * *

We are in receipt of a query as to the necessity for and the qualities of tree wire. Tree wire is the standard line wire with insulation added. It generally is used on toll lines when tree clearance cannot be obtained to avoid leakage.

by MAYME WORKMAN
traffic supervisor
the Illinois Telephone Association
and traffic editor

THE OPERATOR'S CORNER

AS A chief operator, what are you doing to secure the cooperation of your private branch exchange (PBX) operators? The job you are able to do in your office can be affected vitally by the kind of job the PBX operators do. Any effort on your part to be of assistance to them will result in improving your over-all service.

The so-called large telephone companies usually have a routine established for rendering assistance to PBX operators. They supply them with instructions, the assistance of a PBX supervisor, and interesting and informative literature in the form of pamphlets, etc.

The writer's home town company distributed attractive calendars to its PBX customers at the beginning of the year. They contain a page for each month of the year with appealing characters on an attractive colored background. The month of June pictures a young lady in the process of receiving a permanent wave. Since it is the month of brides, cupid is shown, watering a flower garden and wedding bells are strewn all around. An attractive young lady wearing a headset is captioned, "the voice of your company," and at the bottom of the page is printed, "You're 'on the ball' if you acknowledge your calls." I would like to tell you what is pictured for next month, but I decided not to peek so I would have something to look forward to each month.

An interesting bulletin, issued by the Illinois Bell Telephone Co. for its PBX subscribers, in the form of a poster to be hung at the PBX switchboard, contains some helpful suggestions.

The first item pertains to answering calls. It points out that a prompt answer to a signal will go a long way toward maintaining satisfied customers and that a slow answer may result in loss of business.

It is stated that all calls should be acknowledged so that the customer will know that his order is understood and that doubtful orders should be questioned to permit the customer to correct his order, if necessary.

The detrimental effect of plugging out call signals is explained.

The importance of giving progress reports, when a call is delayed due to the extension being busy or slow in answering, is cited. It is suggested that a report be given to the calling party at intervals of 30 or 40 seconds, saying, for example, "Mr. Smith's extension is still busy," or "I'm ringing Mr. Smith's extension for you."

The bulletin explains that by disconnecting as soon as the disconnect signal is received, the unnecessary tying up of equipment is avoided. It is suggested that when in doubt as to whether the signal is a slow answer or a disconnect, the service can be improved by supervising before disconnecting.

Flashes are not overlooked. It is stated, "A flash is most important, for it's the signal that immediate attention is wanted. All flashes should be answered promptly."

It is pointed out that customer irritation may be caused by using irregular practices. It says, "Let's avoid: Cutting out too quickly, inattention, using such indifferent or uninformative words as 'Hello'."

Voice and manner are covered, too. "A pleasant, courteous tone of voice makes friends for our business and our job easier. We accomplish this by speaking distinctly and without haste or impatience—by using as pleasant and helpful a tone as we can."

The chief operator in a small or medium-sized exchange can obtain the cooperation of her PBX operators by displaying an attitude of helpfulness, particularly when the PBX operator calls to report any difficulty she may be having with the service in the central office. A personal call from the chief operator is a very good way of expressing interest and a desire to be helpful. Inviting the PBX operator to visit the telephone office is another way of promoting friendly relations with her.

If the chief operator is aware that a new girl is handling a private branch exchange and she appears to be having difficulty, the chief operator could call the PBX operator and offer her assistance.

Inefficient operating on the part of PBX operators has a detrimental effect on the service in the central office—another very good reason for doing all we can to be helpful to private branch exchange operators.

If you have not given your PBX operators any special attention in the past, why not map out a plan for the future? No doubt you will be well pleased with the results.

Questions from Illinois Operators

(1) What is meant by announcing a collect call to "the first person who answers?"

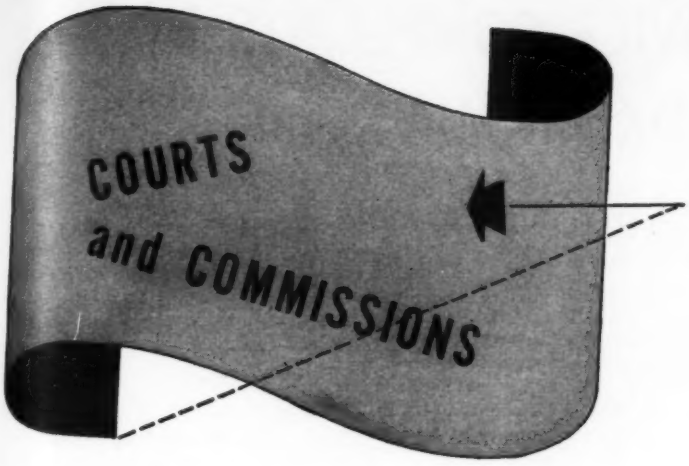
(2) Who is permitted to authorize an emergency route in cases where all circuits are out of order on all authorized routes to a given point?

(3) When should a long distance operator start to advance a call?

(4) What phrase is used in attempting to hold the calling part on the line if you can work on his call right away?

(5) What is a "via office?"

Answers to these traffic questions are presented on page 35.



FCC Suggests Lower Radio-Telephone Rates

The Federal Communications Commission, upon consideration of rates proposed by the Radio Corporation of Puerto Rico for radio-telephone service between San Juan, P.R. and St. Thomas, Virgin Islands, on July 10 requested that the company give consideration to the establishment of lower rates for this service. (TELEPHONY, June 30, page 31.)

The company proposes rates of $3.00 for the initial three-minute period on week days and $2.40 for the initial three-minutes on Sundays, with overtime rates of $1.00 and 80 cents per minute, respectively.

In its request, the commission pointed to an initial period rate of $2.00 for inter-island service in the Hawaiian Islands and a rate of $1.50 for the first three minutes for ship-to-shore telephone service to and from San Juan, P. R., within a radius of 150 miles.

V V

Delay Rockford, Ill., Rate Case

Scheduled to have been held July 12 before the Illinois Commerce Commission in Chicago, arguments on a defense motion for dismissal of a telephone rate reduction case filed by the city of Rockford against the Illinois Bell Telephone Co. will be postponed about two weeks, Rockford Corporation Counsel Charles S. Thomas reported.

No specific reduction in rates is sought, but the bill points out that when Rockford residential telephone rates were reduced 25 cents a month in 1937 and other rates throughout the state were lowered, the savings to telephone subscribers was estimated at $2,646,000. Present telephone rates for residential service in Rockford are $3.25 per month for one-party lines and $2.75 for two-party lines.

Motion to dismiss the petition was filed by the company, and attorneys representing both sides have filed briefs on which arguments will be heard at a date to be set by the commission.

V V

Sparks, Okla., Company Gets Rate Increases

The Oklahoma Corporation Commission on July 11, in an order from the bench, granted the application of the Sparks (Okla.) Telephone Co. for increased rates. (TELEPHONY, June 16, page 25.)

The order was issued at the conclusion of a hearing in which B. Richardson, telephone engineer of the commission, testified that the increase was necessary to prevent closing of the exchange.

A few months ago three Sparks business men, who also are the only subscribers to business telephones in the town, purchased the exchange in order to keep it from closing.

Increases approved by the commission on recommendation of Mr. Richardson are: Business telephone, from $2.00 to $3.00 per month; residence, from $1.00 to $1.50, rural telephones, the same. On switched rural lines where the company owns all facilities, rates were increased from 50 cents to $1.00 per month; rural service, where the subscriber owns the instruments, from 33⅓ cents per month to 50 cents per month.

Mr. Richardson testified that present revenues of the exchange are $72.84 per month, while operating costs would be $142 per month if salaries and taxes were taken into consideration without any allowance for depreciation or return on the investment. Proposed rates would increase present revenues $29.65 per month.

Before the increased rates can be put in effect by the company, improvements must be made which will place the exchange in good operating condition.

V V

Higher Rates Authorized For Illinois Independent

On July 27, 1944, the National Trail Telephone Co., Altamont, Ill., filed a petition with the Illinois Commerce Commission in which it proposed to advance telephone rates to become effective September 1, 1944. On June 22, 1945, the commission authorized the following rates, effective July 1, 1945:

Class of Service	*Present Net Rates*	*Authorized Net Rates*
Altamont Exchange		
Individual business.	$2.50	$2.75
Two-party business.	2.00	2.25
Individual residence	1.75	2.00
Two-party residence	1.50	1.75
Four-party residence	1.25	1.25
Multi-party residence	...	1.25
Rural business	2.00	2.25
Rural residence	1.25	1.50
Beecher City Exchange		
Individual business.	$2.00	$2.25
Two-party business.	...	2.00
Individual residence	1.50	1.75
Two-party residence	...	...
Four-party residence	1.25	1.25
Multi-party residence	...	1.25
Rural business	2.00	2.25
Rural residence	1.25	1.50
Brownstown Exchange		
Individual business.	$2.50	$2.75
Two-party business.	2.00	2.25
Individual residence	1.75	1.75
Two-party residence	1.50	1.75
Four-party residence	1.25	1.25
Multi-party residence	...	1.25
Rural business	2.00	2.25
Rural residence	1.25	1.50
St. Elmo Exchange		
Individual business.	$3.75	$ ...
Two-party business.	3.00	...
Individual residence	2.00	...
Two-party residence	1.75	...
Four-party residence	...	...
Multi-party residence	...	...
Rural business	2.00	2.25
Rural residence	1.25	1.50
Switching service ..	.50	.60

V V

ICC Authorizes Higher Rates For Blandinsville Company

On January 2, 1945, the Blandinsville (Ill.) Switchboard Co. filed a petition with the Illinois Commerce Commission in which it proposed to advance telephone rates and to discontinue

free service from Blandinsville to Raritan, Colchester and Sciota, to become effective February 1.

The following rates were authorized, effective July 1, but the discontinuance of free service was denied:

Class of Service	*Net Annual Rates Present*	*Authorized*
One-party business	$18.00	$24.00
One party residence	15.00	20.00
Two-party residence	14.00	18.00
Four-party residence	12.00	16.00
Rural multi-party	12.00	15.00
Rural switching...	4.00	10.00

V V

Two Minnesota Independents Seek Rate Increases

Hearing on the application of two Minnesota Independents for rate increases are scheduled to be heard July 30 and 31 before the Minnesota Railroad & Warehouse Commission.

Present and proposed schedules for the Pillager (Minn.) Telephone Exchange, to be heard July 30, are as follows:

Class of Service	*Present Net Rates*	*Proposed Net Rates*
Individual line, business	$1.25	$2.50
Two-party line, business	1.00	2.00
Four-party line, business	1.00	1.50
Extension stations, business	...	1.25
Individual line, residence	1.00	2.00
Two-party line, residence	1.00	1.50
Four-party line, residence	1.00	1.25
Rural multi-party switching charge.	.25	.50
Individual owned telephones	...	1.00

The other Independent is the Effington Telephone Co., Parkers Prairie, Minn., which has applied for increased rates at its Urbank and Parkers Prairie exchanges. Hearing is set for July 31. Present and proposed rates follow:

Class of Service	*Present Gross Rates*	*Proposed Gross Rates*
Individual line, business, Urbank.	$2.25	$2.50
Individual line, business, Parkers Prairie..	2.75	3.00
Extension stations, business	1.00	1.25
Individual line, residence	1.75	2.00
Two-party line, residence	1.50	1.75
Multi-party line, residence, village.	1.25	1.50
Rural multi-party, company owned..	1.50	1.75
Rural multi-party, switching charge.	.40	.50

SERVICE COMPLAINTS UP IN OKLAHOMA

By O. D. HALL
Telephony's Correspondent

THE accumulative effects of high operating costs, coupled with shortages of certain equipment and materials, are being felt in Oklahoma in the form of an increasing number of telephone service complaints.

B. Richardson, telephone engineer of the Oklahoma Corporation Commission, reports that the commission recently has received more than a dozen serious complaints of this kind from subscribers.

For several months after the war opened in Europe, the smaller telephone companies managed to utilize materials and equipment on hand for repairs and maintenance, or to secure them from other companies. When such supplies were exhausted they resorted to improvisation and temporary repairs.

In the meantime, many of the small companies were not collecting sufficient revenues to purchase new equipment or materials, if they had been available. Their subscribers manifested a willingness to go along with them and accept service, which, in some cases, was not the best.

The end of the war in Europe saw a change in this attitude of cooperation in some communities. Many subscribers now are becoming more critical as to what they are receiving for their money, not only from telephone companies but from other business concerns in their communities.

Some expert observers of the situation in Oklahoma believe that the time rapidly is approaching when a number of small companies are going to face the absolute necessity of placing their exchanges in good condition or will suffer further losses of telephone subscribers.

About 35 or 40 of the smallest companies already have reached that emergency and have been forced to close their exchanges because of shortages of funds, materials or skilled help. A number of other small plants were saved from closing by local business men who took them over or financed new owners to preserve their telephone connections with their customers.

What finally will happen to the growing number of exchanges now faced with serious service complaints is still a question no one has been able to answer definitely.

The Oklahoma Corporation Commission has been patient with the small companies, which have shown an absolute inability to make proper repairs and additions to their plants. In a number of cases, however, when convinced that the telephone operator was not making the proper effort to improve his service, the commission has ordered such repairs and fixed a time limit when they must be completed.

In all cases where rate increase applications are granted, and the testimony shows that the telephone plant is in sub-standard condition, the commission has required that the improvements be made before higher rates can be placed in effect.

In the meantime, some of the small companies and most of the larger ones, which are better financed, or in a more fortunate position as to materials and help, are managing to maintain standard service. Some of these, however, have been forced to ask for higher rates. A number of rate increase applications have been filed during the past year and several more are pending or about to be filed.

V V

Asks Michigan Bell to Cut Telephone Bills 60 Cents

A cut of $4,500,000 in the rate charged its Detroit customers by the Michigan Bell Telephone Co. was advocated July 10 by Richard A. Sullivan, public utility analyst of the city of Detroit. (TELEPHONY, July 14, page 26.)

Mr. Sullivan, testifying before the Michigan Public Service Commission at a hearing in the rate adjustment fight, said that the company ought to reduce its rates to outstate consumers by $3,500,000.

Detroit residential customers should pay 60 cents a month less, he said, and business users, $1.00 a month less, reducing the company's Detroit income by $3,000,000. The remaining $1,500,000 cut should be made by increasing the number of calls allowed, he said.

Mr. Sullivan said that the company could make the reductions, pay 5 per cent on its stock dividends and still

have excess profits of $500,000 annually.

V V

Wills Voted into FCC

The Senate on July 3 confirmed the nomination of William H. Wills, former governor of Vermont, for a seven-year term on the Federal Communications Commission. He succeeds Norman S. Case, former governor of Rhode Island, whose term expired. (TELEPHONY, June 23, p. 13.)

V V

Summary of Commission Rulings and Hearings

Federal Communications Commission

July 3: Granted authority to American Telephone & Telegraph Co. and the New York Telephone Co. to supplement existing facilities between New York and Washington, along existing cable routes to provide additional channels of telephone communication for commercial purposes and for experimentation towards development and improvement of television service. The authority is limited to the use of such facilities only for purposes of experimentation and no commercial use thereof is authorized, and subject to certain special provisions and conditions.

July 6: Granted authority to the American Telephone & Telegraph Co. to amend its tariffs, effective on not less than one day's notice, to reduce the rates for overseas message toll telephone service between the United States and Portugal and to reduce the rates for overseas channels for program transmission between New York and Lisbon, Portugal.

July 6: Granted authority to Mountain States Telephone & Telegraph Co. to provide emergency service by constructing lines constituting parts of interstate lines between El Paso, Tex., and the Army's White Sands (N. M.) Proving Grounds. The proposed construction in conjunction with existing facilities of applicant, will permit establishment of two private line circuits and one circuit for toll message between El Paso and the proving grounds.

July 10: Granted authority to the American Telephone & Telegraph Co., the Wisconsin Telephone Co. and the Illinois Bell Telephone Co. to supplement existing facilities along the cable routes between Chicago, Ill., and Minneapolis, Minn., and other points; estimated cost of construction is $1,193,000.

July 10: Granted authority to American Telephone & Telegraph Co., Southwestern Bell Telephone Co. and the Southern California Telephone Co. to supplement existing facilities between Dallas, Tex., and the Pacific Coast, and between other points; estimated cost is $797,000.

Illinois Commerce Commission

July 18: Hearing on proposed advanced rates of the Mt. Pulaski (Ill.) Telephone & Electric Co. for telephone service, stated in ICC rate schedule No. 2 for Mt. Pulaski, and schedule No. 1 for Chestnut and Latham.

Indiana Public Service Commission

July 24: Hearing on request of the Dunlap Mutual Telephone Union to increase rates in order to keep the property in good condition and to provide better service. Monthly rates sought are $2.50 for a private business line, $2.00 for a private residence line, and $1.50 for a party line. The current monthly rates are $1.50 for a private line and $1.25 for a party line.

Kansas State Corporation Commission

July 9: Application of George M. Swope and Marguerite Swope for permission to transfer franchise and to cease operating as a telephone company at Penalosa, Kan., and vicinity, taken under advisement.

July 9: Application of Roy E. Henage for a certificate of convenience and authority to transact the business of a telephone company at Penalosa and vicinity, taken under advisement.

July 16: Hearing continued on the failure of the Netawaka (Kan.) Mutual Telephone Co. to file an annual report for the year 1944.

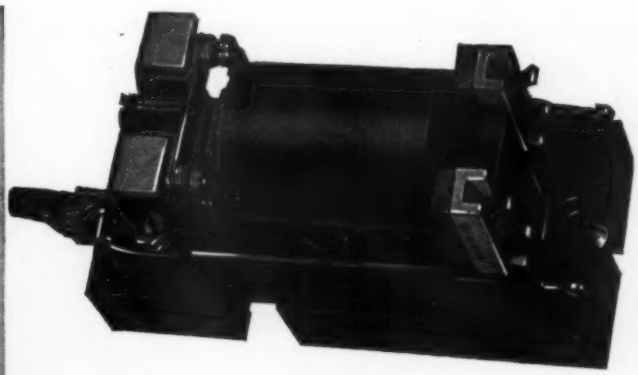
July 24: Hearing on complaint by J. B. Major against the Southwestern Bell Telephone Co. concerning change of territory.

July 31: Hearing on application of the Wetmore Telephone Co. for authority to make certain changes in rates for telephone service at Wetmore and vicinity.

September 4: Hearing on application of Cambridge Mutual Telephone Co. for authority to make certain changes in rates for switching service at Cambridge.

FAHNESTOCK ELECTRIC COMPANY, INC.

Type 3-A Arrester Relay



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● For years there has been a definite need for the use of a protector of the type illustrated above. Its particular adaptation is on rural and toll lines where they parallel power lines for a considerable distance. Many REA lines are strung parallel with rural and toll lines throughout the country. Arrester Relay No. 3-A is the answer.

Why postpone getting the advantages of C.P.R.?

● As more regulatory bodies *require* this accurate system of plant valuation, more leading telephone companies are putting it into effect.

● Among the many benefits of this system—sound original cost study, plus Continuing Property Record—is sure control of construction expenditures.

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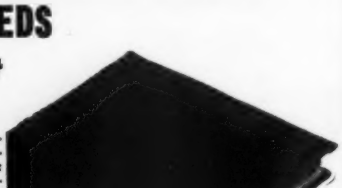
What the COMMUNICATIONS WORKER NEEDS
to know about electricity



Radio men, telephone engineers, telegraphy technicians — all workers in the communication industry — here is a book written expressly for you. It gives you a clear, practical explanation of the fundamentals of electrical engineering *upon which communication is based*. All the explanations, all the illustrations, all the applications are taken from the communication industry and not from the power industry.

THE ELECTRICAL FUNDAMENTALS OF COMMUNICATION

By A. L. Albert, Professor, Communication Engineering, Oregon State College; Professor, Electrical Engineering, Purdue University (1942-43); 550 pages, 6x9, 359 illustrations, $3.50.

Presents the electrical fundamentals of communication, including the three divisions—telegraphy, telephony, and radio with its allied branches. Starts with electronics, explains what the communication technician wants to know about direct current, conductors, resistors, insulators, and discusses such topics as the magnetic field and inductance and the electric field and capacitance solely from the point of view of the communication industry.

COVERS SUCH TOPICS AS:
- Electric measuring instruments
- Electric networks
- Bridge circuits
- Transmission of electromagnetic waves
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New York Public Service Commission

July 3: Hearing on applications of the New Lisbon Farm Telephone Co. and Worcester Telephone Co. to transfer their works and systems to the New York Telephone Co., which joined in the petitions.

August 2: Hearing continued on case of Leon Leighton against the New York Telephone Co. to remove home extensions so that equipment could be used to fill pending applications for service.

Oklahoma Corporation Commission

September 4, 5 and 6: Hearing on application of Southwestern Associated Telephone Co. for increased rates at 27 of its Oklahoma exchanges.

Wisconsin Public Service Commission

June 14: Hearing on application of the Lisbon Telephone Corp., Sussex, for authority to install an automatic switchboard and to make other improvements, and for authority to increase rates $700 annually in proportion to improved service it would be able to give.

V V

New England T&T, Subsidiary Merge

The merger of the Western New England Telephone Co., a subsidiary of the New England Telephone & Telegraph Co., Boston, Mass., with the latter company was effective June 30.

The merger, it was stated, in no way affects telephone service or charges. The only difference will be that exchange service calls will be billed from the 16th of one month to the 15th of the following, with toll calls billed from the 21st day of one month through the 20th of the following.

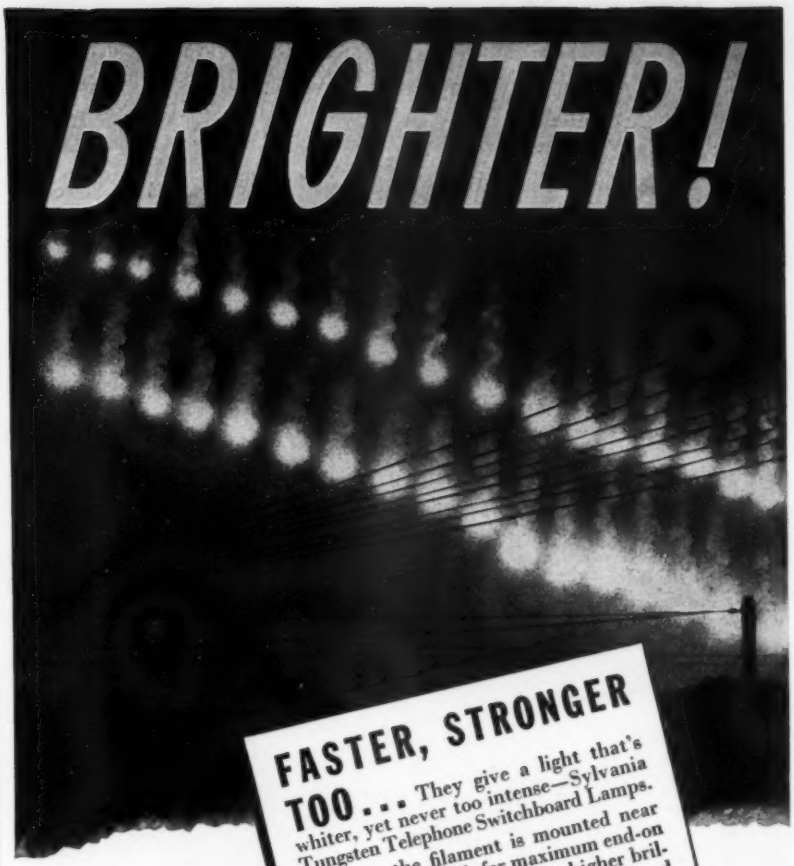
V V

Vote Against Consolidating Mutual Exchange with Bell

Stockholders of the Lincoln Mutual Telephone Co., Greenfield, Iowa, recently voted against giving directors authority to consolidate the company's telephone exchange at Stuart, Iowa, with the Bell exchange at Greenfield.

Clarence Jones, president of the Lincoln Mutual company, presided at the meeting and explained the proposition made by Bell representatives. The Bell company would buy the Lincoln Mutual exchange at Stuart and take over the lines in the town. A flat switch fee would be charged the Lincoln Mutual which would retain the rural lines.

As it now stands, Lincoln Mutual telephone users in Stuart do not have access to long distance service through the Bell. The meeting at Greenfield was to empower the directors to deal with the Bell and work out a proposition whereby the two telephone systems in Stuart would be consolidated under the Bell System.



FASTER, STRONGER TOO . . . They give a light that's whiter, yet never too intense—Sylvania Tungsten Telephone Switchboard Lamps. You see, the filament is mounted near the end of the bulb for maximum end-on illumination. Moreover, this higher brilliance of a Sylvania Lamp is maintained throughout service life.

That's *one* good reason switchboard operators prefer Sylvania Lamps—*they're brighter!*

Two more good reasons are: they're *faster* (tungsten lights up quicker than any other filament)—*stronger* (lamps have an average laboratory life of 1500 hours). Sylvania Tungsten Lamps fit standard sockets, can be used in any type switchboard, and are now available in clear. With restrictions removed, ruby and green will be available shortly.

SYLVANIA ELECTRIC

SALEM, MASSACHUSETTS

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

KLEINS

WHEN HE COMES HOME

● He's finished his job for the Signal Corps—strung his last communication line under enemy fire—run his last power line to light an emergency first aid station. Now he's home again—back on the job of keeping America's peacetime communications moving—the motors of industry turning.

It will feel like old times buckling on his Klein belt—fastening his Klein climbers—a pair of sturdy Klein pliers in his hand. For these quality Klein tools and equipment that served him so well in the Army will serve him as faithfully on his peace-time job as they have other linemen and electricians "since 1857."

Anyone interested in linemen's equipment can obtain a copy of this folder on "Klein-Kord" on request.

ASK YOUR SUPPLIER

Foreign Distributor:
International Standard Electric Corp., New York

Mathias KLEIN & Sons
Established 1857 — Chicago, Ill., U.S.A.
3200 BELMONT AVENUE CHICAGO 18 ILLINOIS

In the Nation's Capital

(Concluded from page 24)

to legislate at the polls through the process of detailed referenda and initiative petitions. The sensible medium is to reinforce the will of the people through their chosen representatives in Congress.

If we do that, the dangers of the Trend Towards Federalism will be neutralized if not entirely abated. But we must trust the people as well as inform them. If we believe in democracy, we must practice it. And we must have a Congress and Supreme Court and a President who will continue to let us practice it. It would follow as night the day that under such a setup, private enterprise, which has the confidence of the American people, would have no fear of persecution or destruction. Those evils can come only when the will of the people has been suspended by the usurped powers of federal bureaucracy.

V V

Ohio Bell Survey Shows Radio-Telephone Need

A large number of firms and individuals contacted by the Ohio Bell Telephone Co., Cleveland, regarding use in the postwar era of mobile radio-telephone service have a definite need for the service, officials said June 30. (TELEPHONY, June 16, page 24.)

The survey is being conducted by Wade Schwartz, service engineer, among truck feet operators, bakeries, express companies and others who would be able to keep in constant communication with their employers on the road.

Ohio Bell already has filed application with the Federal Communication Commission for permission to build a transmitter at Columbus. Under the plan, telephones on automobiles, trucks and boats will be connected with the general telephone system.

V V

Iraq Expands Communications

A $4,000,000 program has been started to expand Iraq's telephone, telegraph and broadcasting facilities, it was announced July 1. The plan will place the country in direct contact with London and New York for the first time.

Women's Pay Equality Bill Introduced in Senate

A bill to equalize wages for men and women doing work of comparable quality and quantity (S. 1178) has been introduced jointly into the United States Senate by Senators Pepper (D., Fla.) and Morse (R., Ore.).

The bill which, if enacted, will be called the Women's Equal Pay Act of 1945, would create in the women's bureau of the Department of Labor an equal pay division, headed by an administrator. Stating that a differential based on sex "is an inequity in compensation standards which constitutes an unfair wage practice," it would make unlawful lower wage payments for similar work on the basis of sex.

Also, it would make it unlawful to discharge a female for a male unless the administrator found it to be "for good cause related to the employment" or in accordance with an established seniority system which does not discriminate against female employes.

V V

Canadian Rural Telephone Service To Be Extended

The Bell Telephone Co. of Canada will spend almost $10,000,000 to extend its services to 20,000 more rural Quebec and Ontario families within five years after men and materials again are accessible, it was revealed in a statement issued July 9.

According to the Bell company, this increase will entail erection of some 2,600 miles of new pole line and 20,000 miles of wire. Meanwhile, the company is conducting wide-scale surveys to ascertain what rural people think about telephone service and what they want.

In the 10 years following the war it is expected that over 100 rural exchanges will be converted to dial operation. The number of homes per party-line will be reduced, and a new-type ringing evolved whereby a subscriber hears the ring for only half the other parties on his line.

One of the chief barriers to extended rural facilities is the cost of the service, which many find excessive. However, it is hoped that economical methods developed through wartime construction will enable more country dwellers to make use of the telephone.

V V

Employs New Staff

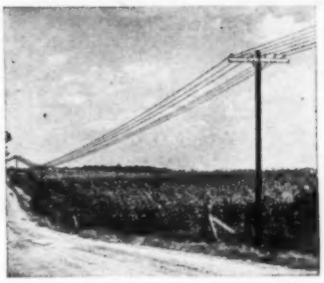
MR. AND MRS. OSCAR PETTYS recently were employed as lineman and operator, respectively, of the Berthold (N. D.) Farmers Telephone Co., succeeding MRS. ELINE BOWMAN, whose resignation as chief operator became effective June 1.

YOU SAVE 3 WAYS

WITH *Crapo* HIGH-TENSILE TELEPHONE LINE WIRE

SAVE MATERIALS

A net saving of 10 to 15 or more pole structures per mile is possible where *Crapo* High-Tensile Line Wire is used in long-span construction. The resultant savings in poles and fittings enable you to extend rural service more economically, more profitably.

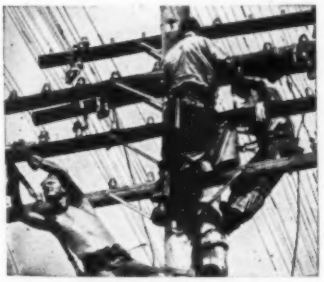


SAVE MAN-HOURS

Less time and labor are required to build a mile of line with *Crapo* High-Tensile Line Wire. Line routing and staking is simplified. There is less hauling to be done, fewer holes to dig and poles to set, less material to be handled, installed and connected.

SAVE MAINTENANCE

Because of its superior strength, *Crapo* High-Tensile Line Wire offers increased resistance to ice and wind, provides a greater margin of safety, than other material. Pole maintenance is reduced because fewer structures are involved.



FURNISHED IN TWO STRENGTHS

Crapo HTL-135 Telephone Line Wire has two-and-one-half times the strength of standard B. B. wire; makes possible spans of 350 feet in Heavy Loading to 500 feet in Light Loading districts. *Crapo* HTL-85 (No. 12 B. W. G.) has 60% greater strength than B. B. wire, provides for spans of 225 feet in Heavy Loading, 375 feet in Light Loading areas. Both have telephonic transmission qualities superior to B. B. wire.

Ask for Technical Bulletins!

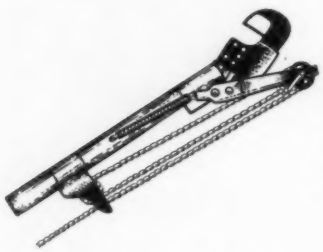
Contact your distributor of *Crapo* Galvanized Telephone Wire and Strand or write for Bulletins No. 201 and No. 202 containing complete technical information!

INDIANA STEEL & WIRE COMPANY · MUNCIE, INDIANA

TREE

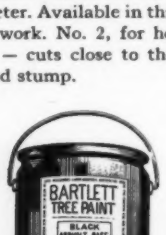
TRIMMERS...PAINTS...WIRE GUARD

"Tree troubles" vanish when your linemen have tools and supplies like these — available via Graybar along with pruning saws, axes, manila rope, and everything else you need for line maintenance or essential construction. For full facts, call the Graybar Telephone Specialist near you. *Graybar Electric Company, Graybar Building, New York 17, N. Y.*



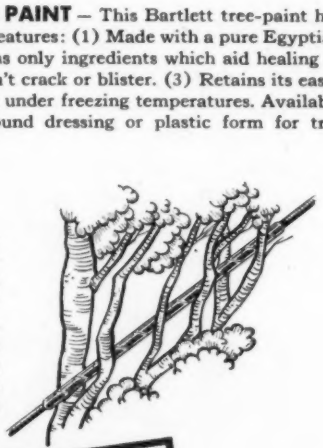
TRIPLE-ACTION TREE TRIMMER
This Newman heavy-duty trimmer first shears one side, then the other side, and then cleaves the middle — all on one downward stroke — assuring a complete, clean cut every time. 1½-in. cutting capacity. Furnished with 10-ft. pole in two 5-ft. sections.

HEAVY-DUTY BRUSH CUTTER — This H. K. Porter "Forester" makes it a cinch to cut green wood up to 2-in. diameter. Available in three sizes: No. 1, recommended for light work. No. 2, for heavy pruning. No. 3, for ground work — cuts close to the earth and leaves a flush, flat-topped stump.



THREE-POINT TREE PAINT — This Bartlett tree-paint has three highly desirable features: (1) Made with a pure Egyptian asphalt base, it contains only ingredients which aid healing of tree wounds. (2) Doesn't crack or blister. (3) Retains its easy-to-apply qualities even under freezing temperatures. Available in liquid form for wound dressing or plastic form for tree surgery.

PLASTIC TREE WIRE GUARD — Made of rugged, flexible, lightweight, clear plastic, this Detroit-Macoid wire guard is excellent for use on drop wire for protection against abrasion where adequate clearance from trees is impracticable to obtain. Linemen easily can thread the plastic helix over an end of the wire during installation or spiral it on the wire when the wire is already in place. Available in 3-ft. lengths. 4565



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IN OVER 80 PRINCIPAL CITIES

John R. Ruddick, Indiana Bell Official, Dies

John Ray Ruddick, 65, who retired July 1 as secretary and treasurer of the Indiana Bell Telphone Co. after more than 39 years in the Bell System, died July 13 following an illness of several months. He had been national treasurer of the American Legion since 1935.

Mr. Ruddick started telephone work with the Chicago Telephone Co. in 1905 as a ledger clerk and advanced to position of general supervisor. In September, 1912, he went to Indianapolis, Ind., as division auditor of receipts for the Central Union Telephone Co., predecessor to Indiana Bell. Except for a military leave of absence, he continued this work until that company's organization in April, 1920 and rose to position of chief accountant there in 1925. In 1938, he was elected secretary and treasurer and also was personnel director from January, 1939, to September, 1944.

Mr. Ruddick was a veteran of the Spanish-American War and held the rank of captain in the Signal Corps in World War I. He was elected national treasurer of the American Legion in 1935, and has been re-elected to that position every year up to the present time.

He was a charter member of Bell Post No. 134 of the American Legion, being elected to commander in 1936. He was a member of the Telephone Pioneers since February, 1927.

V V

Training and Good Foremanship Discussed in Booklets

Designed to be of service to foremen and other department heads, two booklets, "How to Train Your Assistants" and "What the Foreman Needs for Success" have been issued by the National Foremen's Institute, Inc., Deep River, Conn., from whom they may be purchased at 25 cents a copy.

These booklets contain tested methods of success for foremen, supervisors and department heads and may be put to good use by executives in the telephone business who wish to build up better employer-employe relations.

V V

Purchase Site for Building

The purchase of property which is expected to be the site of the new central office building of the Dunkirk & Fredonia Telephone Co., Fredonia, N. Y., was announced recently by Arthur R. Maytum, general manager of the company. He stated that the company plans to purchase new equipment to be installed at the new location.

JOHN J. MORAN, who recently became general manager of the Middle States Utilities Co. of Missouri, Plattsburg, Mo. Mr. Moran formerly was general plant superintendent of the Ohio Consolidated Telephone Co., Portsmouth, Ohio.

Windstorms Damage Nebraska Telephone Companies

Heavy losses were reported sustained by various Nebraska telephone companies in the last few weeks following a number of scattered but violent windstorms. The Butler County area, served by the Lincoln (Neb.) Telephone & Telegraph Co., was devastated by a tornado that killed six farm residents, destroyed a number of buildings and isolated a number of towns from telephone service. Rural lines also were out of service for several days.

An odd feature of the storm was that 41 poles on a line located in the center of the tornado completely disappeared while many others were broken and splintered.

V V

Answers to Traffic Questions on Page 26

(1) The first person who answers should be understood to mean anyone who answers the telephone, especially a private branch exchange operator.

(2) The chief operator.

(3) The call should be advanced as soon as sufficient information has been obtained to do so, that is, the called place and number or address name.

(4) If you are able to advance the call at once, say, for example, "I can try your call right away."

(5) A "via office" is a Class 1 office through which a Class 2 office is routed.

STROMBERG-CARLSON
Recommends...

ARMSTRONG'S
"Whitall Tatum"
Glass Insulators

MFD. BY THE
ARMSTRONG CORK COMPANY

Withstand All Weather Conditions

Armstrong's Glass Insulators withstand all weather conditions. In torrid heat . . . in extreme cold . . . in deluge . . . in blizzard, these rugged insulators have proved they can "take it."

107 years of glass-making experience are back of Armstrong's "Whitall Tatum" Glass Insulators. Raw materials are rigidly tested . . . quality of glass is regularly checked . . . each stage of production is automatically controlled.

Tests show that transverse strength exceeds that of supporting pins. Other characteristics of Armstrong's Glass Insulators are:

Accurate dimensions.
True pin fit.
Crystal clarity.

Conform to—or exceed—A.S.T.M. standards

SUB-CYCLE

"MASTER"
RINGING CONVERTER

No Moving Parts . . . Nothing to Adjust

Sub-Cycle brings to the telephone field an exclusive development in an *alternating current* Power Ringing Converter which fully meets the requirements of operating companies.

It produces a powerful ringing current entirely independent of frequency variations in the commercial power supply.

Economical and quiet in operation, it does not interfere with radio and requires no routine maintenance.

Available in 6 models suitable for loads required by small P.B.X.'s or large central offices.

Output capacities 7½ to 45 watts.

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WHITNEY BLAKE

WB

WELL BUILT WIRES SINCE 1899

Change No. 19 and 22

INSIDE TELEPHONE WIRES

TO

PLASTITE*

PLASTITE* Insulated Inside Telephone Wire is —

1. Small Diameter. Makes a neater job on inside wiring.
2. Colors are bright and permanent. easier to see.
3. Strips Cleanly and Easily.
4. Practically Ageless.
5. Trouble Free Installations.
6. Flame Proof.
7. Lower Cost.

Order by WHITNEY BLAKE Catalogue No.

No. 19 Twisted Pair
Brown or Ivory—19PN-2

No. 19 Triple
Brown or Ivory—19PN-3

No. 22 Twisted Pair
Brown or Ivory— 22PN-2

No. 22 Triple
Brown or Ivory— 22PN-3

Raised Ridge in Insulation for Polarity

THE RIDGE shown in the enlarged section is extruded on one leg of a twisted wire where both are the same color. This ridge makes tracing easy in darkness or in light. The third leg of a triple wire has two ridges.

* Reg. U. S. Pat. Office

A TRIAL ORDER of this bright, smooth extruded PLASTITE* Insulated Wire will convince you that it is the ideal Inside Wire.

Order Now for Prompt Shipments.

Ask GraybaR for Prices and Samples

"GraybaR" Distributed by GraybaR ELECTRIC COMPANY

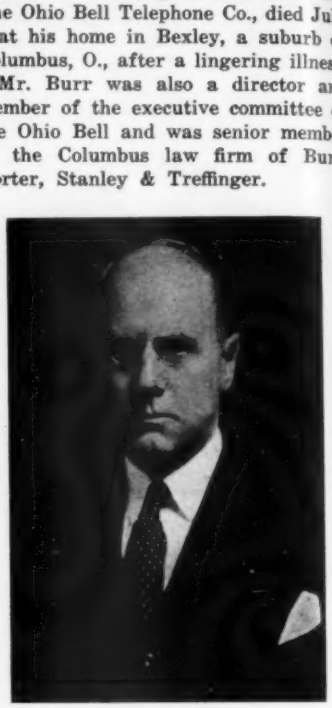
The WHITNEY BLAKE Company

New Haven, Connecticut, U. S. A.

Karl E. Burr, Ohio Bell Counsel, Passes Away

Karl E. Burr, general counsel for The Ohio Bell Telephone Co., died July 9 at his home in Bexley, a suburb of Columbus, O., after a lingering illness.

Mr. Burr was also a director and member of the executive committee of the Ohio Bell and was senior member of the Columbus law firm of Burr, Porter, Stanley & Treffinger.



KARL E. BURR

Born in Columbus, O., on March 6, 1877, Mr. Burr prepared for college at University School in Cleveland and was graduated from Princeton University in June, 1900.

In 1903 he entered general law practice in Columbus. His first contact with the telephone business was in 1914 when the firm of Henderson & Burr became attorneys in Ohio for the old Central Union Telephone Co., predecessor of the Ohio Bell, which operated in Ohio and several other midwestern states.

Mr. Burr was made counsel for the Central Union company in Ohio in 1919 and later for the Ohio Bell when it was organized in 1921. He became a director of the Ohio Bell on February 23, 1926, and on August 24 of the same year became the company's general counsel and member of the executive committee.

In addition to the Ohio Bell, Mr. Burr was a director of the Columbus & Southern Ohio Electric Co., the State Industrial Bank and the American National Fire Insurance Co.

Surviving are Mrs. Burr; two daughters, Miss Cynthia K. Burr and Mrs. Louise Miller; two sons, Gwynn Burr, a lieutenant colonel in the Army, and Karl E. Burr, Jr.; a brother, Eugene P. Burr; two sisters, Mrs. Chauncey Baker and Mrs. Lincoln Bourne, and four grandchildren.

Wallace Backs Bankers' Plan To Help Small Business

Secretary of Commerce Wallace wants bankers to know they have his "wholehearted support" in their efforts to supply the credit needs of small business, according to a recent news dispatch.

"Existing sources of credit should be utilized," he said in a letter to a reporter.

"Government funds should be employed only if absolutely necessary to accomplish the task, in which case they should be used not to supplant but merely to supplement existing sources of credit."

The reporter had written Secretary Wallace to ask his reaction toward banking efforts to meet the coming needs for business loans without help from governmental sources.

It is assumed that Mr. Wallace includes small telephone companies in his classification of "small business." If so, it would seem that the secretary probably would not favor the enactment of the recently proposed federal rural telephone legislation.

V V

Pike Appointed Member Of Two USITA Committees

Harry W. Pike, Madison, Wis., vice president of the Commonwealth Telephone Co. and the Illinois Commercial Telephone Co., has been appointed chairman of the commercial committee and a member of the Rural Telephone Service Committee of the United States Independent Telephone Association. Mr. Pike succeeds J. F. O'Connell, Madison, who recently resigned from those committees.

Mr. O'Connell recently retired from the presidency of the Commonwealth and Illinois Commercial companies and as a director of the USITA.

V V

W. M. Kendrick, Indiana Bell Traffic Supervisor, Dies

William M. Kendrick, 60, general traffic supervisor for the Indiana Bell Telephone Co., died suddenly at his home in Indianapolis on July 6.

A telephone man for almost 39 years, Mr. Kendrick started in the business on September 1, 1906, when he joined the plant department of the Central Union Telephone Co. at Indianapolis. From that time until April, 1920, when the Indiana Bell was formed, he held the positions of service inspector, wire chief, publicity agent, district traffic chief, traffic supervisor, and division supervisor of traffic.

For the next few years Mr. Kendrick served the Indiana Bell as assistant

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Distributed by 172 Leading Electrical Jobbers located throughout the U. S.
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PITTSBURGH OAKLAND CALIFORNIA CHICAGO
MANUFACTURERS OF A COMPLETE LINE OF HARDWARE FOR TELEPHONE REQUIREMENTS SINCE 1900

CLEARS LINES...for Important Outside Calls

Maxwell M. Kahn, Superintendent of Denver's Western Art Leather Company, using his Teletalk. Three master stations and three smaller Teletalk units provide instant communication between the firm's offices and departments.

Telephone subscribers with switchboard installations are finding that Teletalk, used as a supplementary intercommunication system, frees their lines from many *inside* calls . . . releases them for important, "can't-wait", *outside* calls.

In many business houses—offices, warehouses, factories—Teletalk speeds customer service by permitting the subscriber to get desired information quickly while talking to an outside party. More calls from the same telephone equipment . . . savings in time and energy . . . elimination of delay, waste motion, errors, confusion . . . Teletalk can bring all these advantages to your subscribers. You share in the benefits, because *cleared* lines are *revenue-producing* lines.

Teletalk is moderate in first cost; is easy to install and to use; needs almost no service; operates from the regular lighting circuit. Encourage its use by large and small businesses in your area. Write for complete information.

Let's All Back the Attack
Buy Extra War Bonds

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WEBSTER ELECTRIC
Teletalk
REG. U.S. PAT. OFFICE
. . . Adds hours to your work week

WEBSTER ELECTRIC

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"Where Quality is a Responsibility and Fair Dealing an Obligation"

supervisor of traffic, toll traffic supervisor, and division traffic supervisor. In January, 1924, he was appointed district traffic superintendent for the Kokomo, Central and Indianapolis toll districts.

Mr. Kendrick was made outstate division traffic superintendent in December, 1929. In October, 1935, he assumed the duties of general traffic employment supervisor, the position he held at the time of his death. He became a Telephone Pioneer in March, 1928, and served as president of Hoosier State Chapter during 1934.

V V

Mrs. R. B. Miles Passes Away

Many telephone people throughout the country were saddened to learn of the death of Mrs. Laura Miles, wife of R. B. Miles, Kansas City division manager of Kellogg Switchboard & Supply Co., on July 9 at Grand Rapids, Mich.

For many months Mrs. Miles had been in ill health and while her home was in Kansas City, Mo., she had been residing lately in Grand Rapids under the care of Mr. Miles' sister.

Laura Miles was loved by a great many telephone folks, having gained friendships everywhere as a result of her regular visits to the various state and national telephone conventions during the past 25 years. Her friendliness and cheerfulness are a loss felt by all who knew her.

Burial services were held July 12 at Grand Rapids.

V V

New Bill Includes Operators In Wage-Hour Amendments

A bill (H.R. 3719) which, if enacted, would include switchboard operators at 500-station exchanges, made exempt by Congress in 1939, in Wage-Hour Act amendments including a minimum weekly wage increase from 40 to 75 cents in an established 35-hour week, was introduced in the House of Representatives by Congressman Patterson of California.

The bill, which would repeal all exemptions to the present law, also would establish a five-year period of limitation for bringing wage suits.

V V

Would Exempt Vets Tax

Members of the armed forces would be exempted from paying the tax on long distance telephone calls made from military or naval establishments under a bill recently introduced by Representative Green (D., Pa.)

North Electric Appoints William Saltmarsh

Appointment of William Saltmarsh as sales engineer, representing the North Electric Manufacturing Co. in Minnesota, recently was announced by that company.

WILLIAM SALTMARSH

Mr. Saltmarsh, formerly of Prior Lake, Minn., was educated at the University of South Dakota. Later he entered the telephone field, and for many years engaged in various phases of telephone sales and engineering both in private industry and in governmental service. For a time he was owner-operator of a Minnesota Independent telephone company. He has established his headquarters at St. Cloud.

V V

Hotels May Establish "Outpost" Branches

The Independent telephone industry may expect to find a source of increased toll and local revenues if the establishment by hotels of branches on the outskirts of cities is pursued after the war. Such activity is very likely, according to the editors of *Architectural Record* and *Hotel Management* in recent issues.

Branch hotels, the editors state, would mean an improvement in accommodations generally available to tourists along the highway, since the need of hotel facilities will grow with the resumption of motor travel.

The "outpost inn," it was stated, is far from the ordinary tourist court, but rather is intended as part of a year-round operation.

V V

Amery Company Changes Name

Effective July 1, according to an announcement made by H. N. Griffin, manager, the name of the Amery Electric Co. of Amery, Wis., officially was changed to the Amery Telephone Co.

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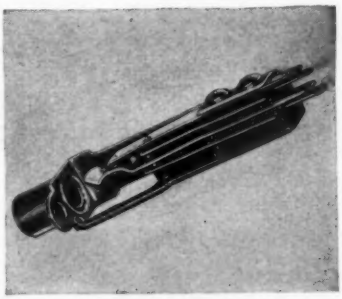

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OBITUARIES

Carrie Gann, wife of George K. Gann who is a retired executive of the Gary group of telephone companies, died July 16 at Carmel Hospital in Carmel, Calif., after an extended illness.

Mr. Gann retired from the Gary organization in 1941, at which time he moved to California.

* * *

MRS. ORISSA RUSSELL, widow of CALVIN P. RUSSELL, for many years secretary-treasurer of the Lincoln (Neb.) Telephone & Telegraph Co., died July 8 in San Diego, where she had been living with her two sons.

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